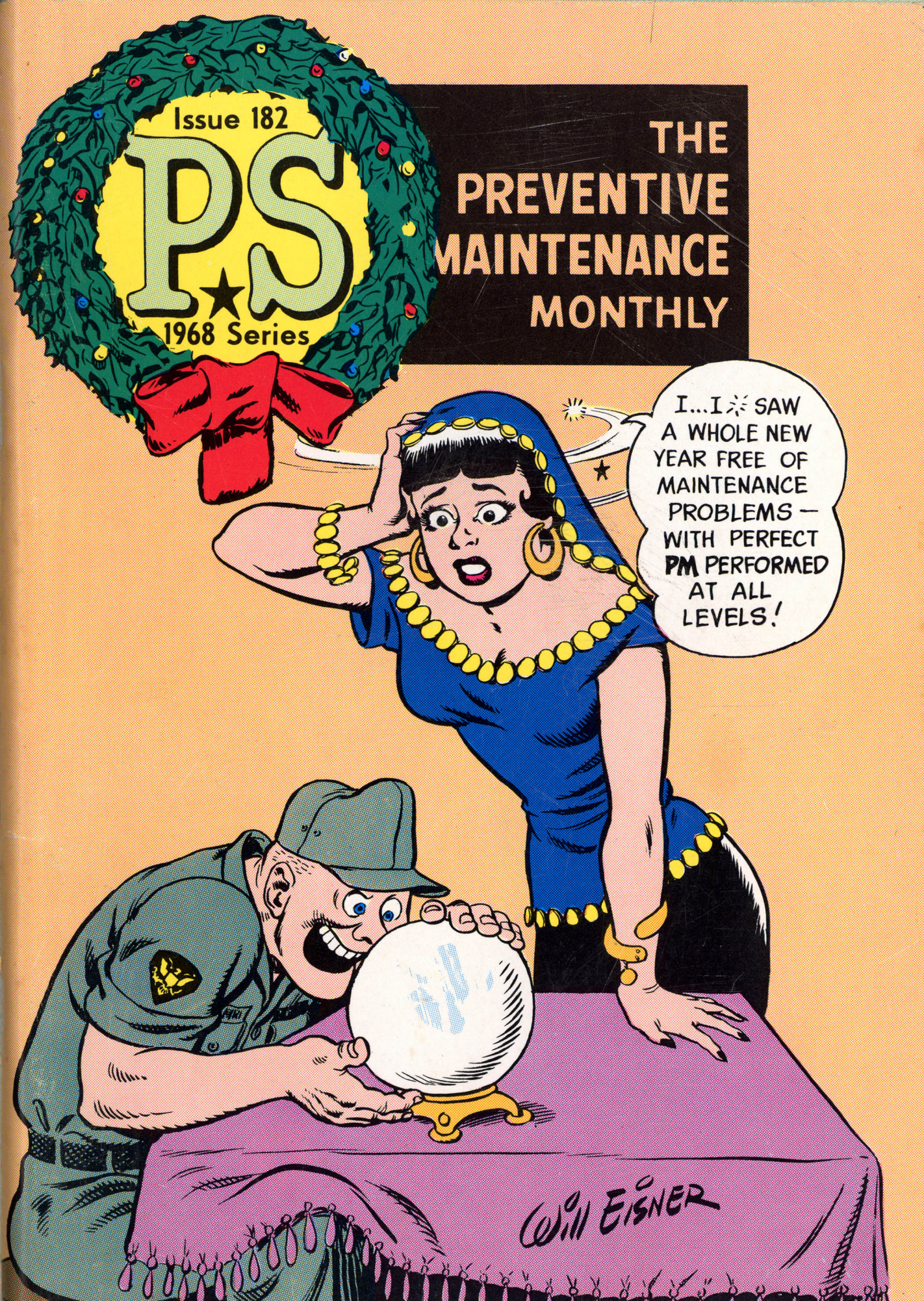
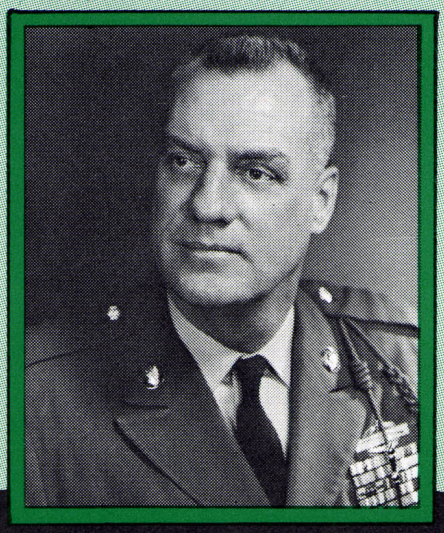
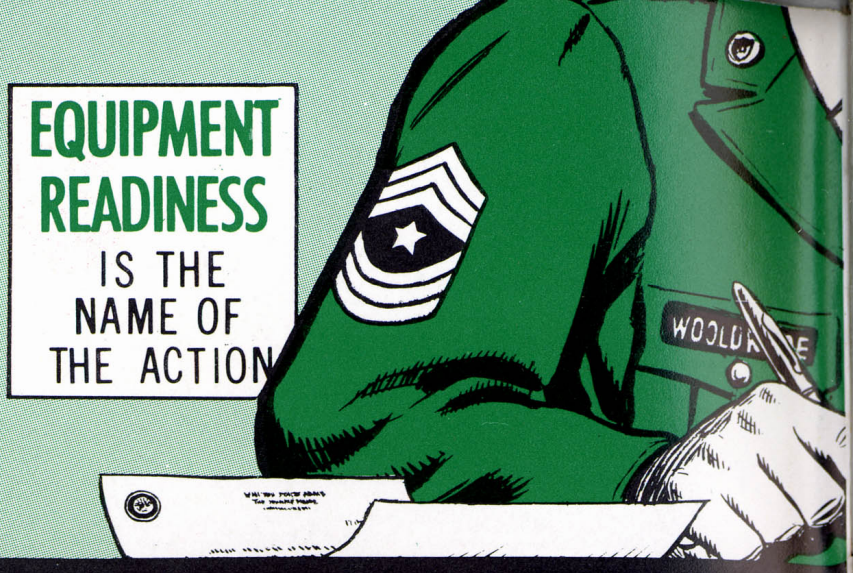

Issue 182
PS
1968 Series
THE PREVENTIVE MAINTENANCE MONTHLY
I...I SAW A WHOLE NEW YEAR FREE OF MAINTENANCE PROBLEMS — WITH PERFECT PM PERFORMED AT ALL LEVELS!
Will Eisner





"WHAT CAN WE NON-COMS

In my travels to Army units all over the world, I find we are still experiencing some difficulty in the equipment readiness field. This equipment readiness problem is one that we, as non-commissioned officers, can do something about.

Army equipment, if not handled or operated properly, can get damaged, worn out, or its life-span shortened unnecessarily. Overloads, rough handling and careless operation kill equipment. Also, some equipment gets maintained on an "if-and-when" basis. It does not get lubed when lube is needed; oil levels, tire pressures, adjustments and similar conditions are forgotten. Dirt collects; filters clog up.

What can we non-coms do about it?

First, we have got to exercise more control of the men and equipment under our command. Then, we have got to see that the equipment is operated with the care that it requires. Loads, speeds, voltages, pressures; these are just a few of the things to keep in mind. Finally, we have got to see that the PM gets done. If we do our job effectively, it will get done.

This job will require the burning of a lot of midnight oil. We have much to keep abreast on because many men are new to the non-com ranks; it may have been some time since some of us worked on equipment. But we must **know** if we are to tell a soldier how to do his job. As such, we must study those tech manuals, read the

EQUIPMENT READINESS IS THE NAME OF THE ACTION

YOUR JOB IS TO **KNOW!**

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With PM know-how, firm leadership, and aggressive supervision by us non-coms, the readiness of our Army equipment will stay up to standard. We will have a better Army, ready to fulfill its mission when called on.

How about passing the word to other non-coms?

William Wooldridge

WILLIAM O. WOOLDRIDGE
Sergeant Major of the Army

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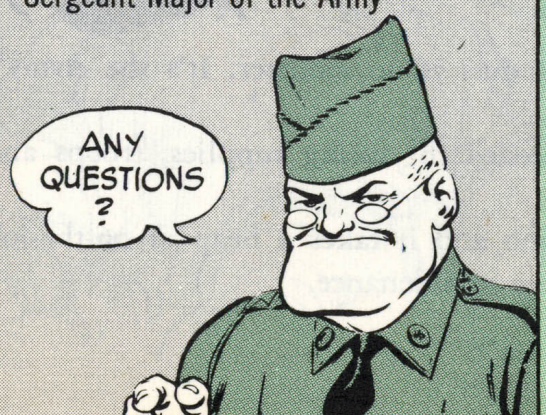

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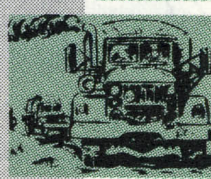

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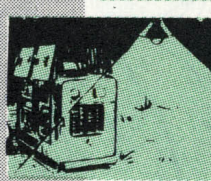

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GATHER 'ROUND, PARDNER, FOR A CH-47 . . .

CHINOOK MAINTENANCE

The brute looming thru that cloud of dust is no monster. It's the Army's friendly workhorse.

Yessir-e-e-e, when the big muscle is needed for toting supplies, troops and weapons, the call goes out for The Hook.

'Course crewing this bruiser is a big job and it takes a heap of on-the-job training to do a first-rate job of preventive maintenance.

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CHINOOK MAINTENANCE ROUNDUP

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Keep Drive Shafts in Balance

This baby has 5 transmissions to reduce the 15,000 engine RPM to 230 rotor RPM. This means you have a lot of drive shafts turning at high RPM. You can get a high freq vibration if the balance of any shaft is changed.

Take the shafts between the engine transmissions and the combining transmission which "turns" at about 11,000 RPM. These shafts are balanced within 0.02 inch-ounce as an assembly, including the adapters on each end.

Two nuts and bolts holding the flexible coupling plates to the adapter are riveted together to prevent repositioning of the plates and unbalancing of

the assembly. Never remove these nuts.

The shafts connecting the combining transmission to the forward and aft transmissions rotate at about 7,000 RPM. You'll find 2 riveted flexible coupling plate retaining nuts and bolts on the steel adapter end of each shaft, so that you can remove the adapter and replace a shaft bearing. Be sure the parts go back the way they came off.

The adapter and shaft are indexed. You'll find a #1 etched on one lug of the steel adapter. The bolt hole must line up within 5 degrees with the hole

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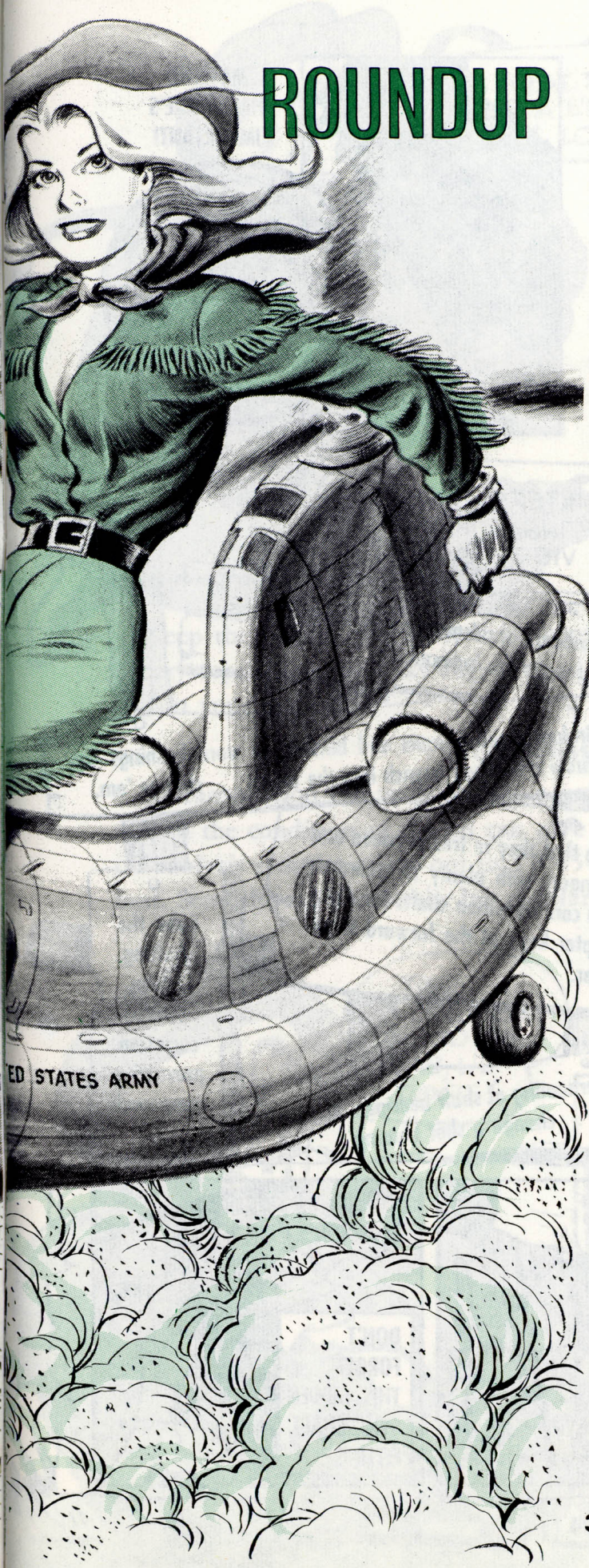
ROUNDUP



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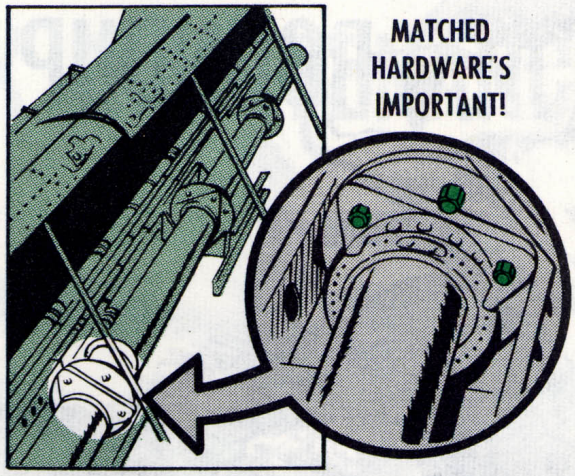
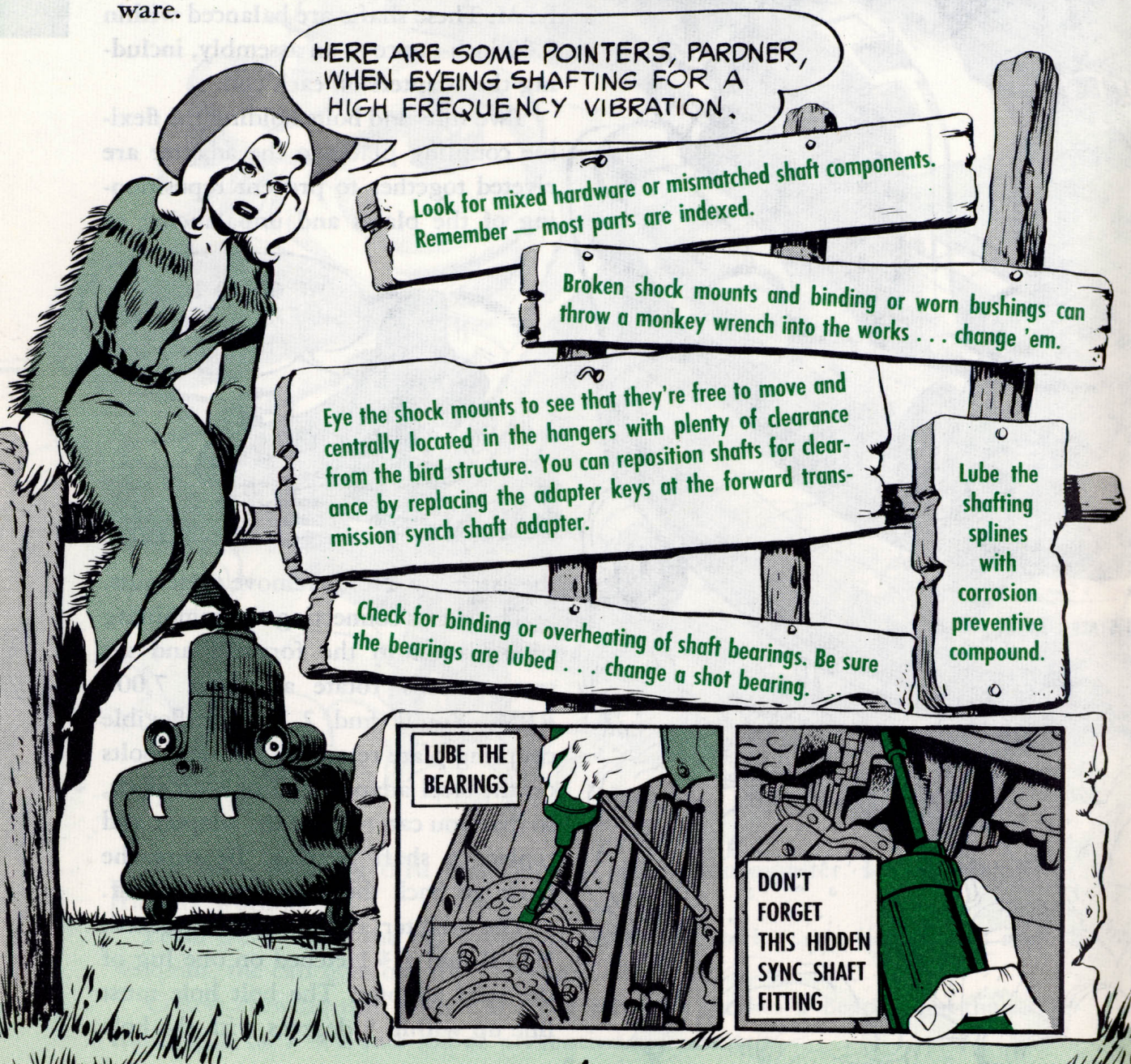
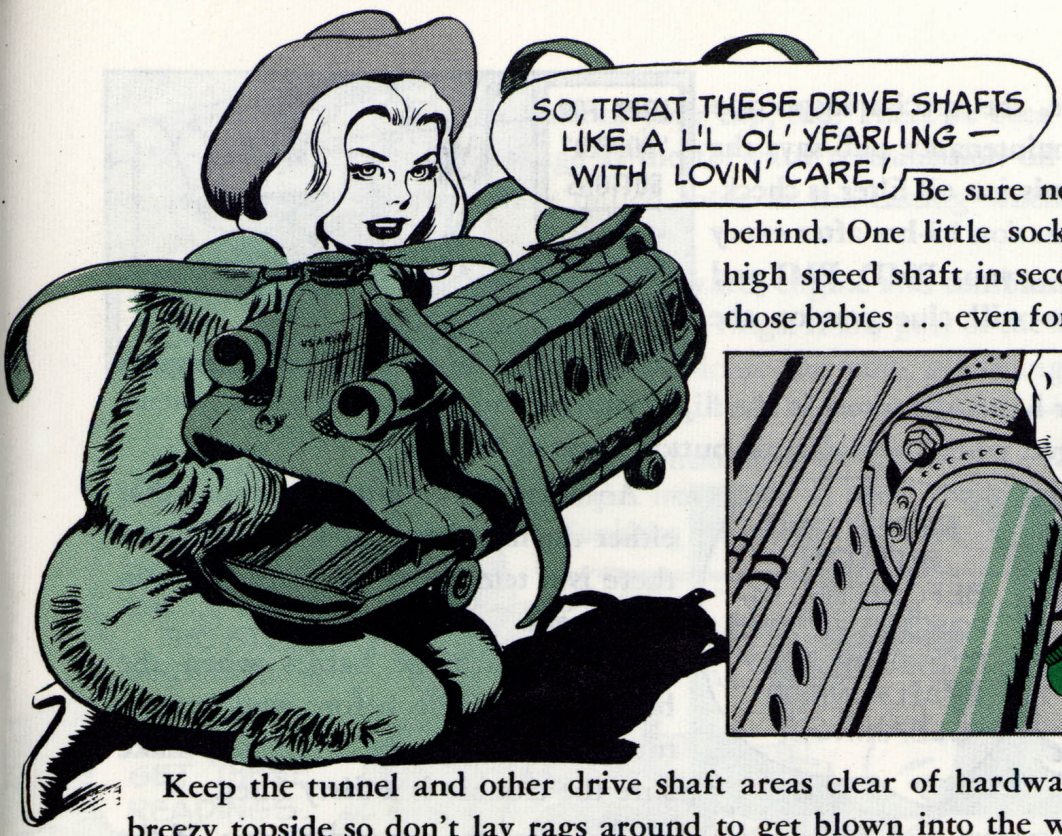
PS MORE

in the lug identified as #2 on the other end of the shaft.

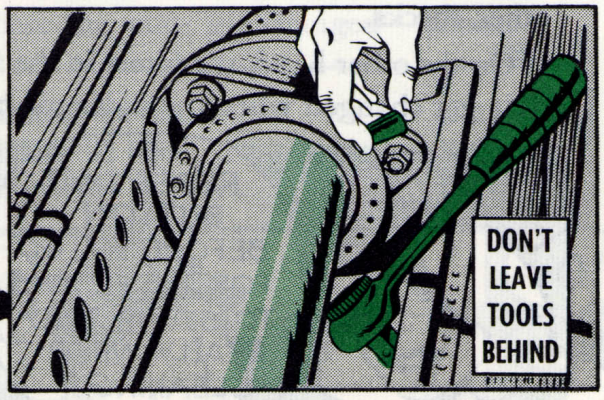
Since the nuts and bolts have been balanced with the shaft assembly you can throw the shafts out of whack if you use hardware that is not exactly of the same weight range as the original. Some nuts, for example, differ in size and weight between manufacturers. Make doubly sure new hardware weighs the same as the removed hardware.







Be sure no tools are left behind. One little socket can score a high speed shaft in seconds. You need those babies . . . even for autorotation!!



Keep the tunnel and other drive shaft areas clear of hardware. It's usually breezy topside so don't lay rags around to get blown into the works . . . stash 'em in your pockets.

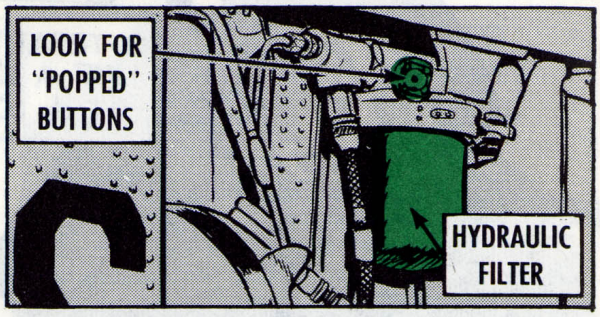
Transmission Care

A transmission failure is usually a gradual process — not a "right-now" deal — and the condition of the oil can give you a warning. That's why taking the oil analysis samples called out in TB 55-6650-300-15 (26 Jun 67) is so important. Send the samples to the lab regularly.

The "right-now" part of keeping tabs on your Chinook transmissions is done by pulling filters and chip detectors.

PS MORE

For example, the special inspection part of your maintenance pub says the forward transmission oil filter is checked for contamination 15-hrs after every Intermediate . . . your PMD, PMI and PMP checklists will clue you on the other checks.

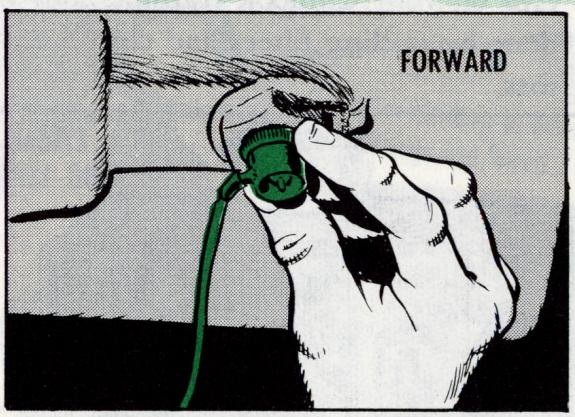


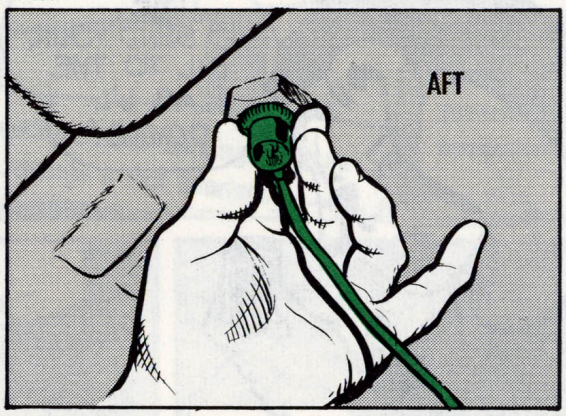
On the other hand, the filters in the flight control and utility hydraulic systems only get changed when the indicator button is extended.

An extended button means that either the filter element is fouled up or there is a temporary pressure surge in the system.

You clean these babies when the button pops. But before you prematurely make with the wrenches, make sure the trouble is a dirty filter.

Operate the system and while it's operating, reset the popped button. If the button pops immediately, clean or replace the filter and check for the source of contamination, sure thing. If the button does not pop out, you've got it made in the shade.

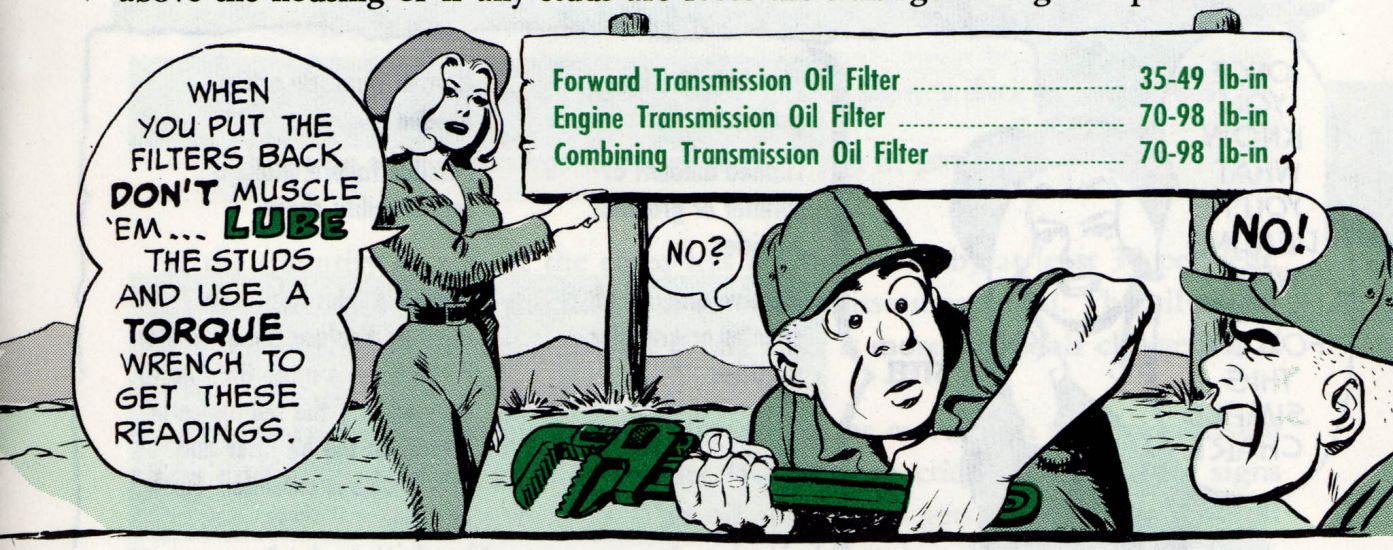




Yessir-e-e-e, even tho you have electrical chip detectors to show iron particle contamination and differential filters with pop-out indicators, you have to inspect filters and screens for the materials that don't register on a chip detector, such as bronze, magnesium and aluminum. Pull these filters and screens and double check 'em like your pub says.

Paste this pointer in the back of your cap, tho. There've been several mission aborts due to heavy oil leakage at the forward transmission oil filter. It seems that the oil filter studs were pulled loose in the casting when the nuts were tightened too much.

So-o-o-o, when you eyeball the forward, engine and combining transmission filters be sure you check the studs and key rings. If any part of the key ring extends above the housing or if any studs are loose the studs get changed—pronto!



Whenever you spot chips in a screen, filter or chip detector it's mighty important to know what you're looking at. You want to shoot for the overhaul schedule in TM 55-1520-209-20 (6 Apr 67) and not pull accessories prematurely . . . saves much moola!!

By the way, any transmission or aft vertical shaft in the B Model should have "B" stamped on the nameplate after the part number so it gets the right TBO. If the letter is missing, make with the hammer and stamp—ever so gently, please!

Particles in the filters and screens don't necessarily mean the transmission has had it. Determining the quantity, source, form and type of chips is what separates a cowpoke from a tenderfoot. All it takes is a little OJT.

You can tell tin and lead particles by using a clean soldering iron heated to 500-degrees F (261-degrees C) tinned with 50-50 solder. Wipe off the excess

P.S. MORE

solder and drip the particles on the iron. Tin will melt and fuse with the solder but lead will not melt.

Use at least a 4-power magnifying glass to eyeball the particles for shape, markings or discoloration.

Aluminum, magnesium, copper, bronze and silver particles can only be positively identified by chemical analysis of an oil sample.

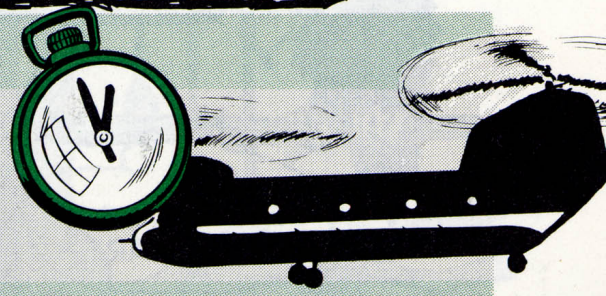
STEEL	Fine hair-like fuzz particles	Normal wear. No action needed
	Limited amount of splinter or granular particles	Possible failure. Make a serviceability check
	Massive amount of splinter or granular particles	Failure. Replace the transmission. Replace the oil cooler if the filter is more than half clogged or if the red indicator button on the oil filter and relief valve is extended. Flush all lines
	Thin flake's up to 1/16-inch in diameter and 1/4-inch long, maximum of 10 flakes	Make a serviceability check

If the limits are exceeded replace the transmission. Replace the oil cooler if the filter is more than half clogged or if the red indicator button on the oil filter and relief valve is extended. Flush all lines.

ALUMINUM or MAGNESIUM	Granular particles	Probable result of tool usage. Make a serviceability check.
COPPER, BRONZE or SILVER	Limited amount of granular particles	Possible indication of bearing cage wear. Make a servicability check
	Massive amount of granular particles or chip particles	Failure. Replace the transmission. Replace the oil cooler if the filter is more than half clogged or if the red indicator button on the oil filter and relief valve is extended. Flush all lines
PHENOLIC and PLASTIC	Granular particles	Result of tool usage. Flush the system

HOW DO YOU PULL THE TRANSMISSION SERVICEABILITY CHECK? LIKE SO!

1. Flush the transmission.
2. Do a ground run-up for 1-hr at 230 rotor RPM. Be sure to eye the transmission oil pressure and temperature. If they are out of limits stop the run and check the system.
3. Drain the transmission oil thru cheesecloth or filter paper to check for more particles.
4. Eye the oil filter, scavenge screen and magnetic plug for particles.



If the quantity or size of the chips has not decreased by at least 30 per cent, your maintenance officer should have the transmission replaced. The oil cooler is also changed and all lines flushed if the filter is more than half clogged or if the indicator button on the oil filter is extended.

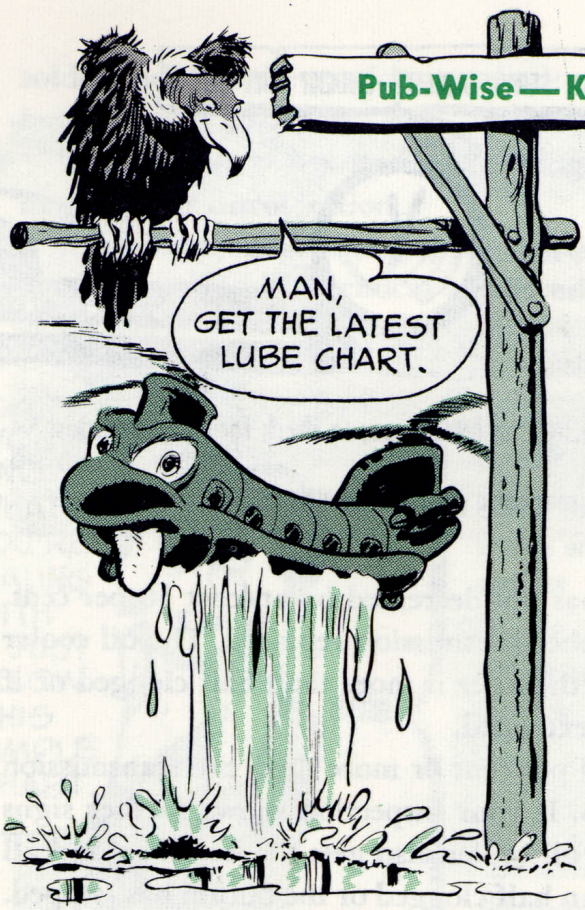
If the particles have decreased by 30 per cent or more flush the transmission again and make another ground run-up. If your inspection shows further signs of chips, replace the transmission. The oil cooler also gets the heave-ho and all lines are flushed if the filter is more than half clogged or the button has popped.

1. Drain the transmission according to the poop in the organizational maintenance pub.
2. Next, clean the oil filter, scavenge strainer and magnetic plug or chip detector.
3. Disconnect, drain and flush the transmission oil system lines. Remove, drain and flush the oil cooler.
4. Service the transmission and ground run the chopper until the transmission oil temperature stabilizes in the normal operating range.
5. Shut 'er down and repeat the flushing thru servicing bit . . . that's all there is to it.

Check Other Filters, Screens

'Course the poop about checking and cleaning filters goes for all lubrication and fuel filters. Follow your checksheets and you won't go wrong and miss one—like the aft drive shaft thrust bearing oil filter . . . called out in para 7-157 of the maintenance pub.

P.S. MORE



Pub-Wise—Keep Current

To keep your bird ready for action be sure you check the manuals regularly . . . changes are always in the works.

Take TM 55-1520-209-20, for one. You know how water and grease don't mix? Well, when your beast squats down in a rice paddy a lot of grease is gonna get washed off the landing gear wheel bearings . . . don't exactly make for healthy bearings!!

Result—the bird lube chart has been changed. If the wheel is removed before 100 hours for a tire change the wheel bearings should be repacked at the same time. And, after a water landing, the bearings have to be repacked with grease within 7 days.

Take the MWO file, for another. The latest weapon in the fight against foreign object damage is the T-55 engine air inlet screen called for in MWO 55-1520-209-30/67 (27 Jul 67). No self-respecting bird engine should be without one.

Order Right Parts

When you requisition an item from the parts pub and the nomenclature includes an MWO reference, only a modified bird rates the part.

Check the aircraft serial number list in the MWO to find out whether your bird is to be modified. To find out if the mod has been done, eye the DA Form 2408-5 or physically check your bird.

When the MWO shows that your bird was modified prior to delivery no further check is necessary—your bird rates the part.

One point about a parts kit, tho. Don't scrounge parts from it or you'll wind up with a lot of useless kits. Instead, order the individual parts you need right out of the parts manual.

If a mod kit is not complete when it gets to you, fill out an EIR. When you fill out Section III of the DA Form 2407, be sure you make with all the poop . . . helps track down strays. There's plenty of room in block 35 for—the part number, quantity short, contract number, contractor's name, date of packaging and any other info you may have.

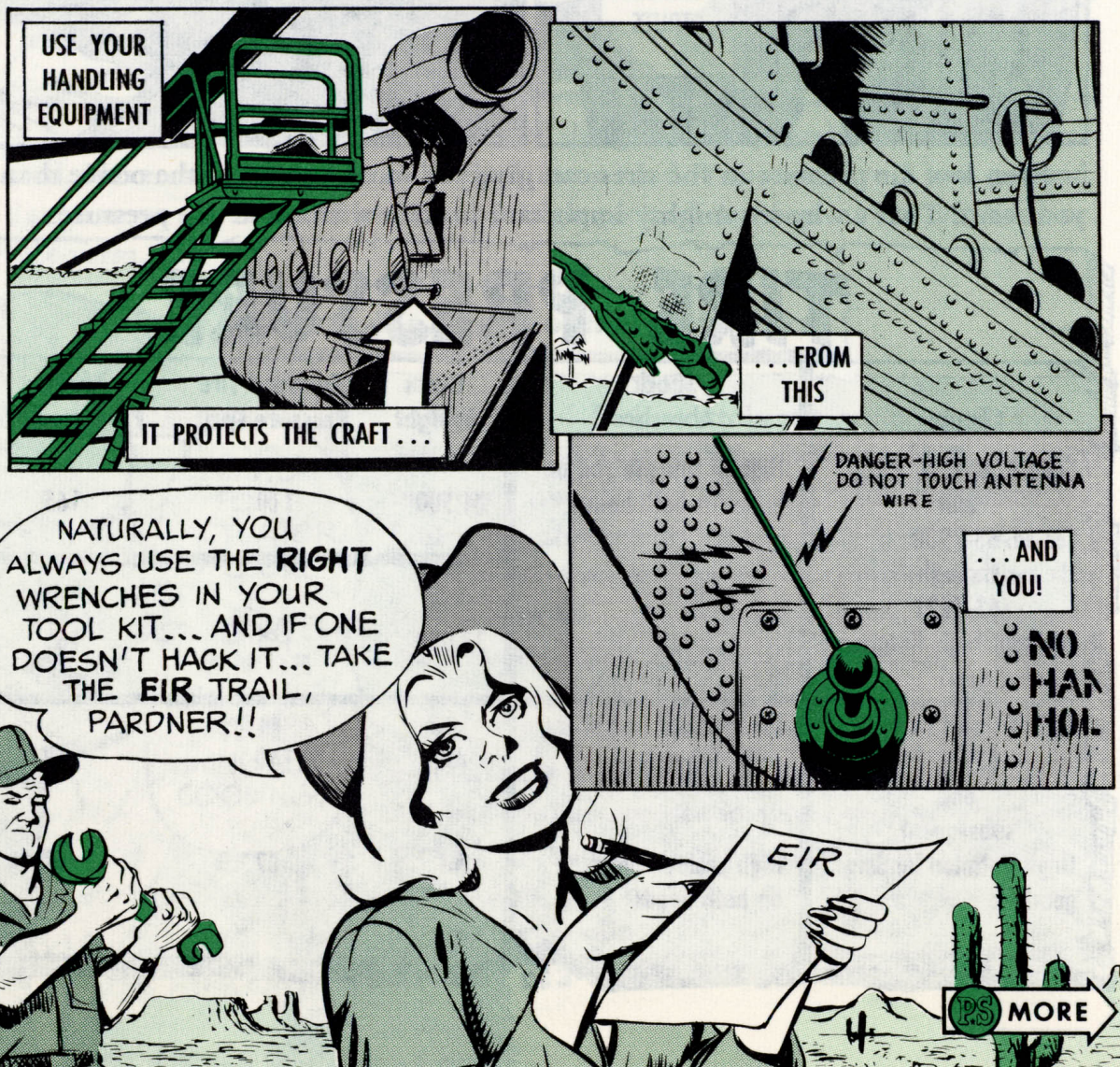
Use the Right Tools

Who was it said a cowpoke always reaches for the right tools to do a job?

He's right, you know.

Take all those special tools and ground support equipment for your bird. They're made to pull, push, lift and move parts by putting the stress where it belongs.

F'rinstance, when it's time for an A Model main rotor blade change, reach for the blade sling, P/N 114E5911-48, FSN 1730-781-4493. Using other makeshift methods will only bend the trim tabs and put unknown and maybe damaging stresses on the blade and rotor head.

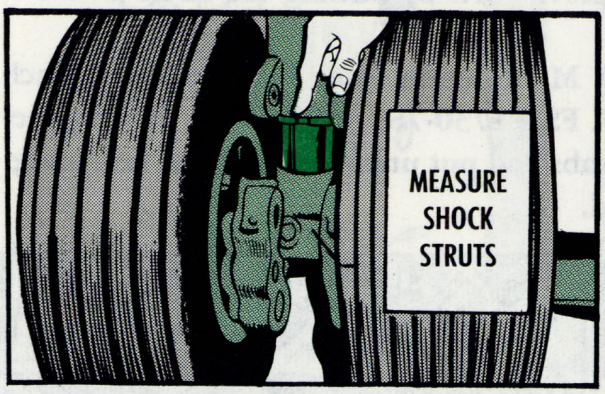


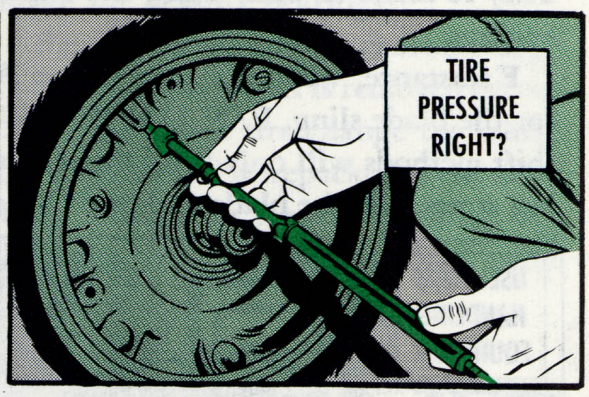
P.S. MORE

No Ground Bounce, Please!

Using the proper amount of the right fuel, oil, hydraulic fluid and grease when servicing your beast is a must.

If your bird has the squat look of an old truck horse you're going to get ground bounce when she lifts off or comes in to roost. Better service those landing gear shock struts with hydraulic fluid and air before you jar your bicuspids loose and maybe sideline your bird with injuries.



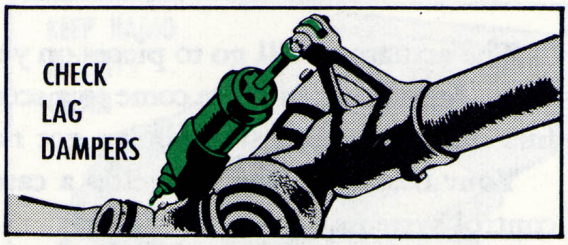


Even low air pressure in the tires can give you more bounce to the ounce than you want. That's why it's mighty important to stick with these tire pressures.

TIRE PRESSURE

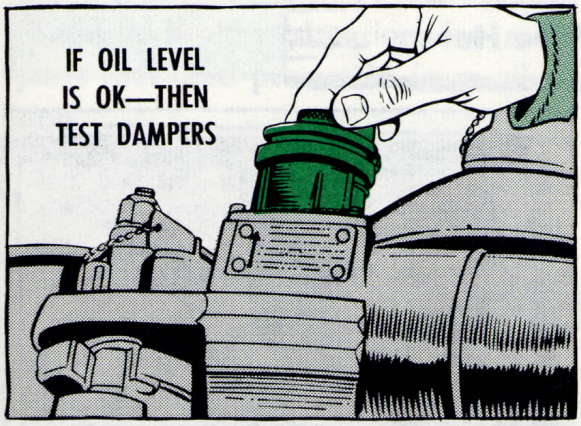
Chopper	Shock Absorber	Gross Weight	Forward Tire Pressure (psi)	Aft Tire Pressure (psi)
Code A, B, C, D, X.1, and Ser No. 63-7900 through 63-7921 (without high flotation landing gear)	High or low preload on either or both heads	24,500	110	165
		33,000	165	165
Code X.2 and Ser No. 63-7922 and subsequent (high flotation landing gear)	Low preload on either or both heads	All	140	67
	High preload only, on both heads	All	67	67

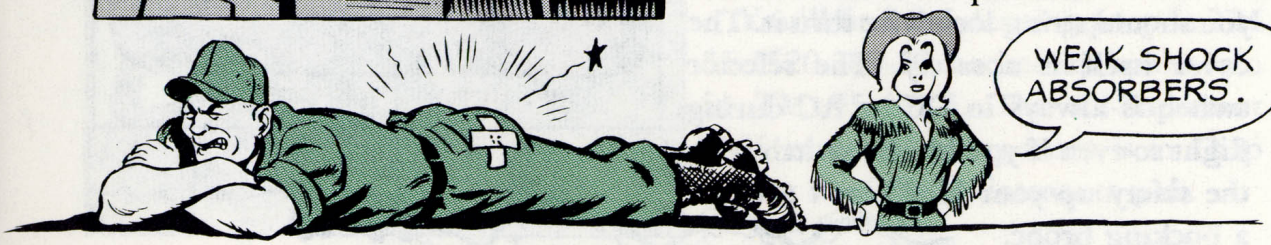
If your bird is still acting up after servicing the landing gear have a look-see at the main rotor shock absorbers (lag dampers). These babies are designed to prevent ground resonance.



Could be the teflon rod-end bearings are worn beyond the limits called out in the maintenance pub. One point about these dry-type bearings—don't lube 'em or they'll go to pot for real.

On the other hand, you could have a weak shock absorber. In this case check (or have your support check with the proper test fixture) the 3 dampers from the rotor head in question.





Remember that you have 2 types of dampers—low preload and high preload. Never mix 'em on an individual rotor head. You can have 3 low preload dampers on the forward head and 3 high preload dampers on the aft head or vice-versa, tho.

Save the Fuel Control Actuators

More good fuel controls get replaced than you can crack a whip at . . . or so it seems. In many cases improper distribution of the jet juice is caused by faulty adjustments and rigging.

So, when you're rigging or troubleshooting the fuel system best call in your support. The N1 and N2 actuator motors can really take it on the chin if you're not careful.

The N1 actuator motor turns up to 21,000 RPM and the gear train has a reduction of 2,904 to 1. The N2 has similar speeds. So when they wind up and move back and forth any length of time they get a mite warm. The limits are one minute running and 10 minutes cooling.

P.S MORE

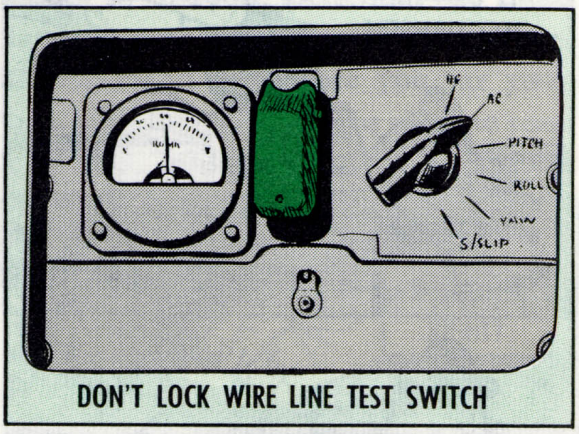
The actuators will go to pieces on you when they're rigged or adjusted wrong. If the little gears in there come to a screeching halt when the fuel control pointer hits the mechanical stop you've got nothing left but a hand full of metal chips!!

Your best bet? Don't develop a case of "tinkeritis" on the engine condition control systems.

No Lock Wire Here

Fact is, "tinkeritis" never does pay dividends.

Take the No. 1 and No. 2 SAS amplifier line test switch. Sure, the switch cover has a hole drilled in it. But, just like Fig 2-26 in TM 11-1520-209-20 (5 May 65) indicates, this doesn't mean you should string lock wire thru it. The cover itself is a safety. The selector switch is always in DC or AC during flight so even if you hit the switch with the safety up your bird won't act like a bucking bronc.



DON'T LOCK WIRE LINE TEST SWITCH

Fact is, some types have wired the cover so tight that it deflected the metal plate, causing inputs into the system and erratic control movements!!

The same deal goes for makeshift improvements—taping a part here . . . repositioning a hose there. Your best bet is an EIR. Who knows, maybe your idea will lead to a design change?

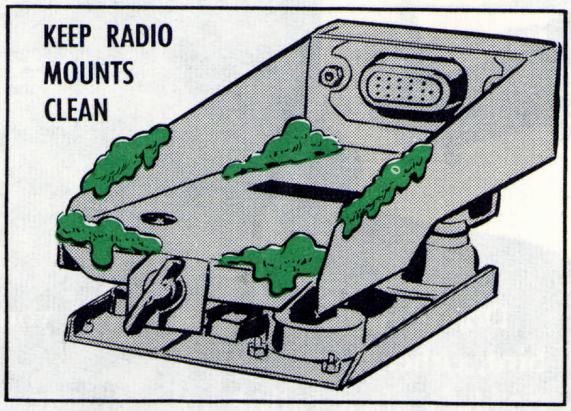
Keep Your Baby Clean

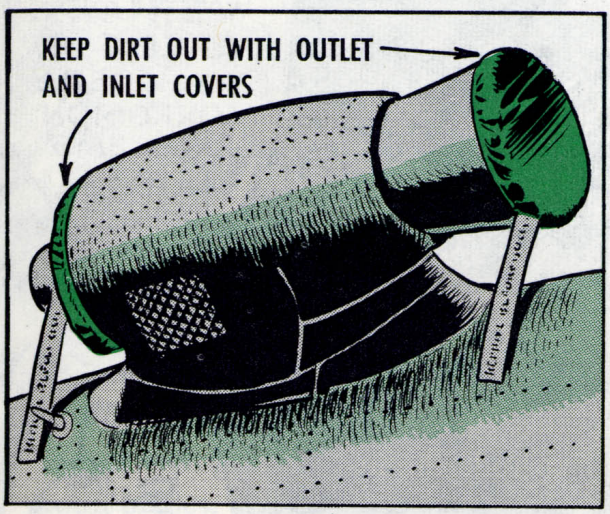
When it comes right down to it the only way to deal with your 2 big maintenance foes of water and dirt is with old-fashioned elbow grease.

This means using all your protective covers. Dirt blown into an engine can give you a hot start and shorten engine

life. Blowing dirt can contaminate grease in a system and ruin seals . . . cause early part changes.

Hear-tell that in one case dirt got caked so bad in a radio compartment that it froze the ARC-54 shock mounts. 'Taint a healthy situation for radio parts that need protection from vibration.



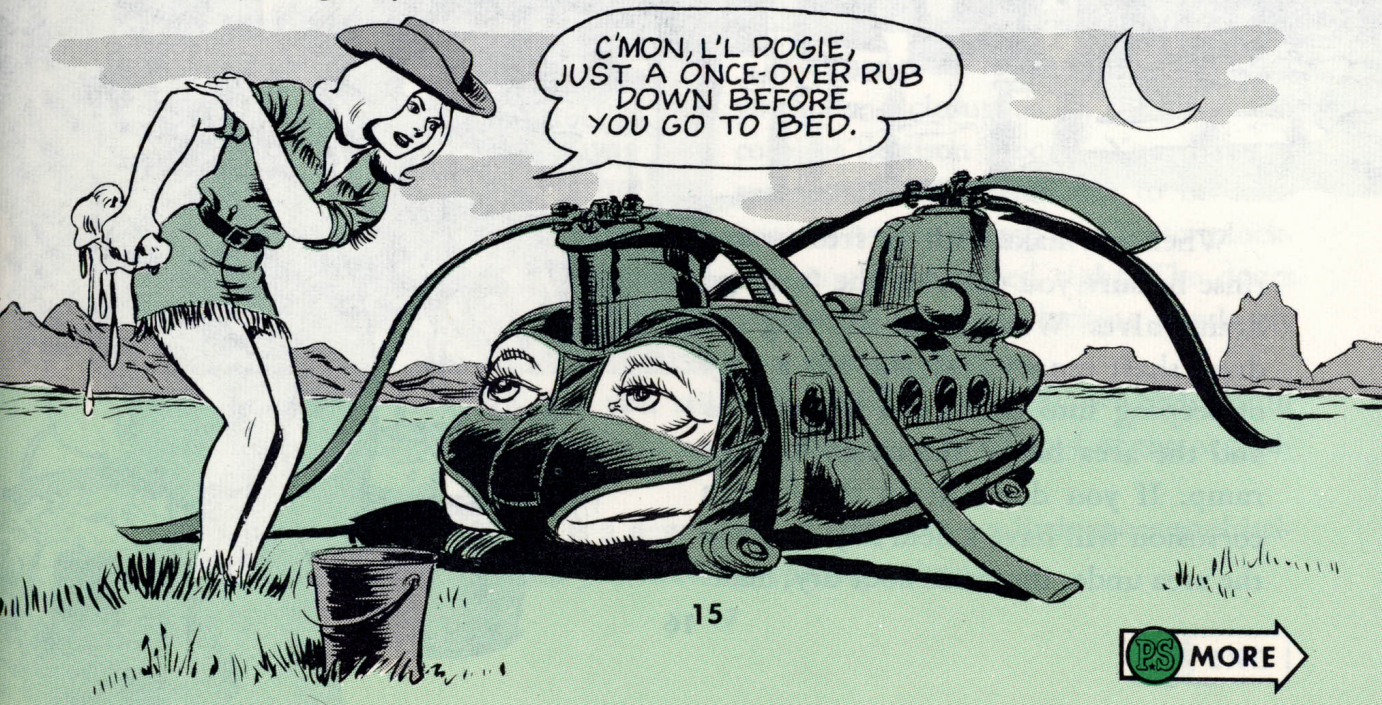


'Course your missions call for setting down in the boonies and you can't do anything about the clouds of dust and grass stirred up. You have to grin and bear it—until you get back to the hard pad for cleaning.

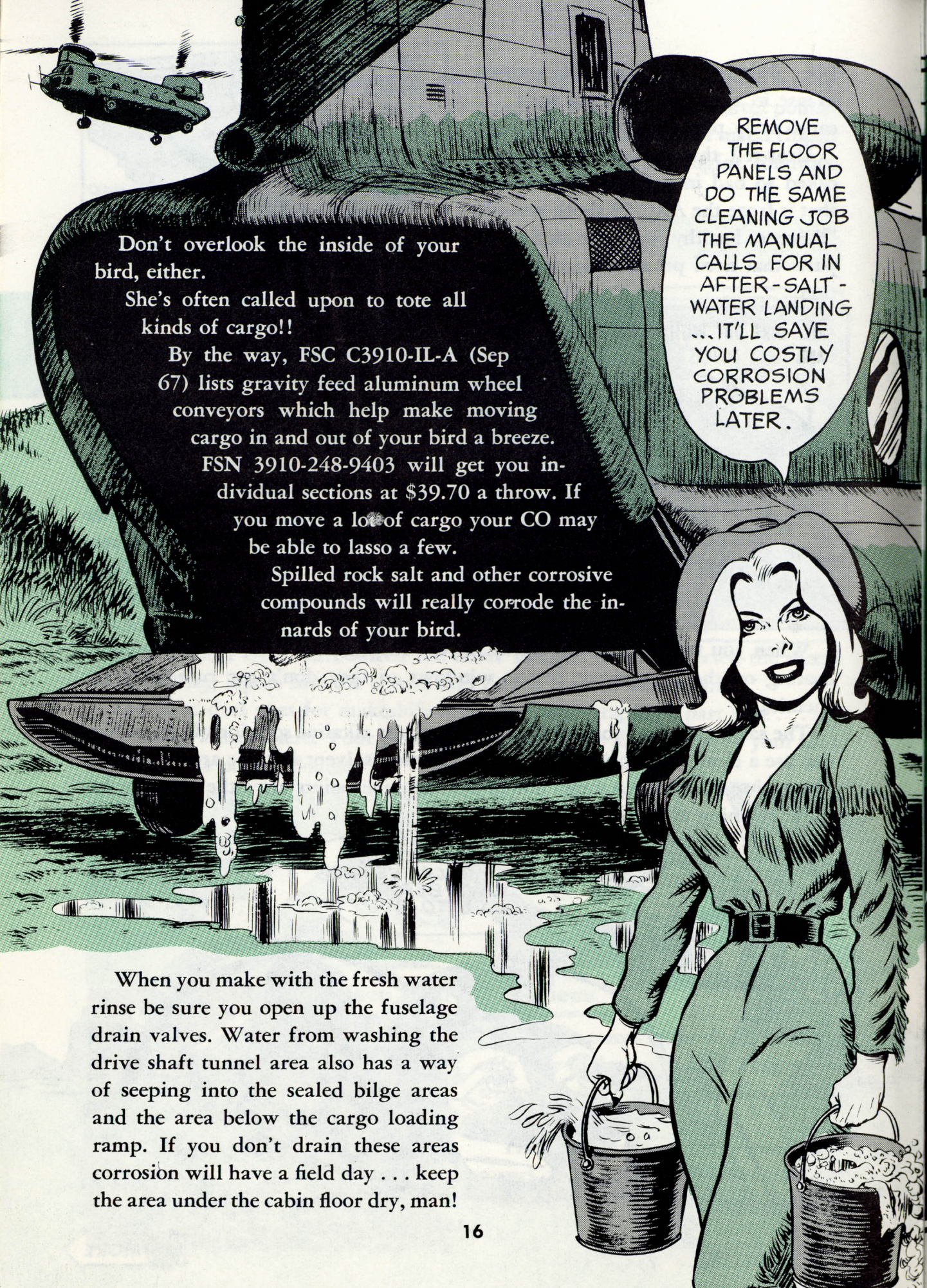
You'll find the cleaning poop in TM 55-1520-209-20, backed up by the info in TM 55-405-3. The all-important T-55 engine cleaning scoop is in Chap 5, Sect II of the maintenance pub.

When you use the cleaning spray on the fuselage use a stripable protective coating on the transparent plastic windows so they don't get ruined by the chemicals.

The same goes for lubricated parts—keep the alkaline solution off them. You can use a clean rag moistened with dry cleaning solvent in these areas . . . sorta like giving Ole Dobbin a rub down. Eye the lube points after the cleaning because relubing may be needed.



PS MORE



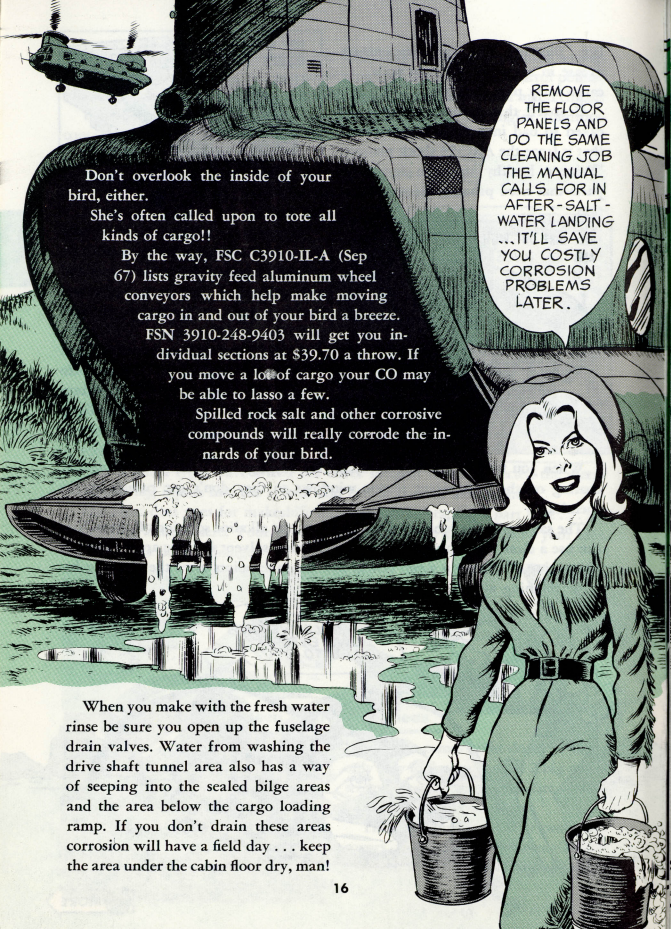
Don't overlook the inside of your bird, either.

She's often called upon to tote all kinds of cargo!!

By the way, FSC C3910-IL-A (Sep 67) lists gravity feed aluminum wheel conveyors which help make moving cargo in and out of your bird a breeze. FSN 3910-248-9403 will get you individual sections at $39.70 a throw. If you move a lot of cargo your CO may be able to lasso a few.

Spilled rock salt and other corrosive compounds will really corrode the innards of your bird.

When you make with the fresh water rinse be sure you open up the fuselage drain valves. Water from washing the drive shaft tunnel area also has a way of seeping into the sealed bilge areas and the area below the cargo loading ramp. If you don't drain these areas corrosion will have a field day . . . keep the area under the cabin floor dry, man!



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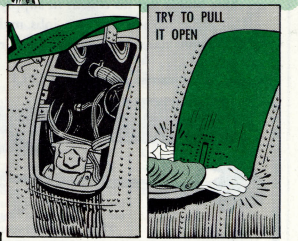
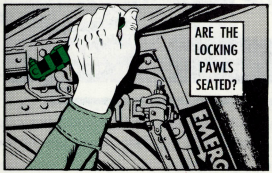
Wanted—Togetherness!

There's nothing quite so embarrassing as seeing a bird door sail into the rotor blades. Which is a pretty good reason why a crew chief should be doubly sure all the latches are latched, natch.

You can make a simple check by latching the door and inserting your fingertips under the door to try and pull it open. If there is no "give" she's latched.





Another place to be mighty sure that you have a closure is on the pilot and co-pilot jettison doors. You have a spring seal there that has to be compressed before the top and bottom locking pawls are seated right. The doors are secure when the locking pawls are in a vertical position.

If these doors close OK but you still get lateral movement—which could mean loss of the doors—follow the appropriate poop in Chap 4 of the organizational maintenance pub.

Yessir-e-e-e, your Chinook is a new breed of chopper—a little more sophisticated but then that's the kind you need for the big missions.

END

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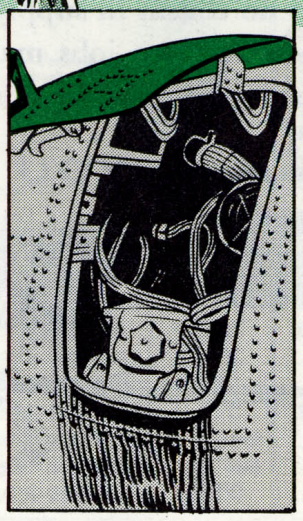

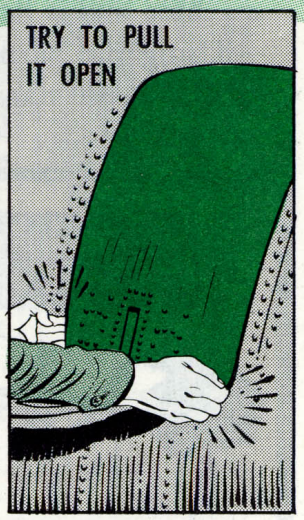

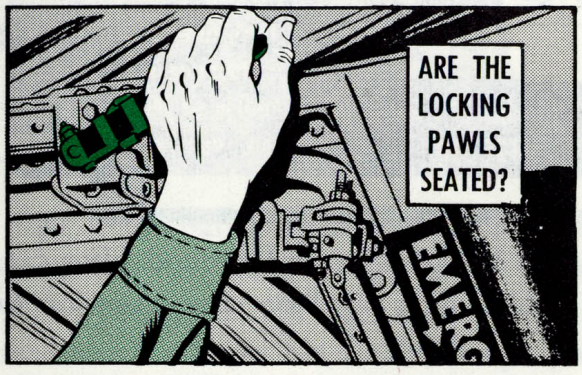

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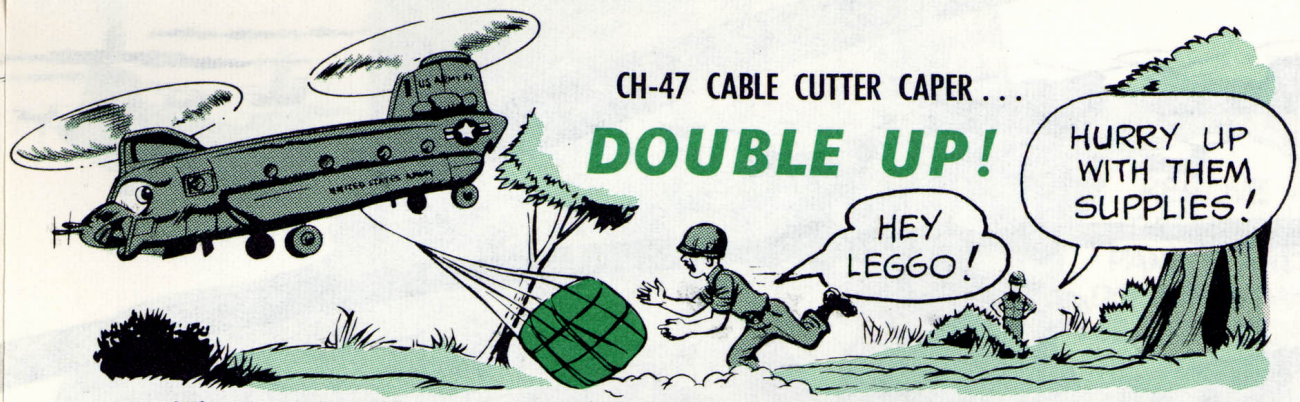
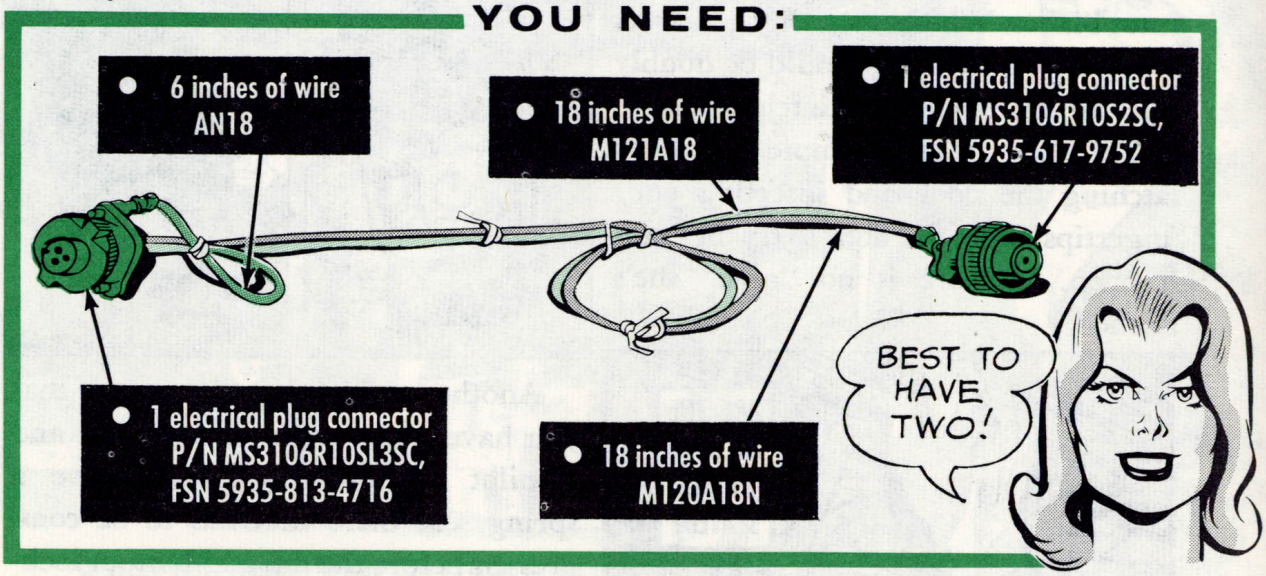


That's right, Chinook knucklebusters. If you lose or damage the cable-cutter arming device, you could be in a Numbah One Thou situation . . . fast! Without it the pilot can't let go of a snagged load during rescue or cargo winch operations.

This pigtailed device pulls double duty. It's plugged into the cable cutter receptacle on the auxiliary control panel while loading cargo. It's also plugged into the overhead cable cutter receptacle midway down the cargo compartment on a rescue mission.

Only one of these electrical wiring harnesses come with your double rotor machine and it has no cousin in supply.

Using the harness for two jobs makes it easier to drop or step on it. Either mishap could damage the plugs or wiring. So-o-o-o, why not have an extra one handy?



Connect A pins on each plug with M121A18 wire and ground plug cases with M120A18N wire. Use the 6-in AN18 wire for loop connection on the 3-hole receptacle plug.

Securing a cable cutter harness at each winch control circuit outlet makes sense—just don't get too fancy about it! Green cloth tape should hold it in place just dandy!

When your mission is snaggin' a Dragon from the boonies the harness will be within easy reach, you betcha.

DA FORM 2408-16 AND DA FORM 2410 MEET . . .

THE SPOILER

If you've been playing a paperwork guessing game when you take a part off your bird or put one on—the game's over . . . hip—hip—hooray!

The spoiler is the new TB AVN 23-65 (28 Apr 67) on components requiring maintenance management and historical data.

This pub lists bird time-change and condition items by part number and FSN and shows you exactly what forms need to be filled out to speed a removed part thru repair channels and back into service again.

Let's have a look-see at the table in this pub.

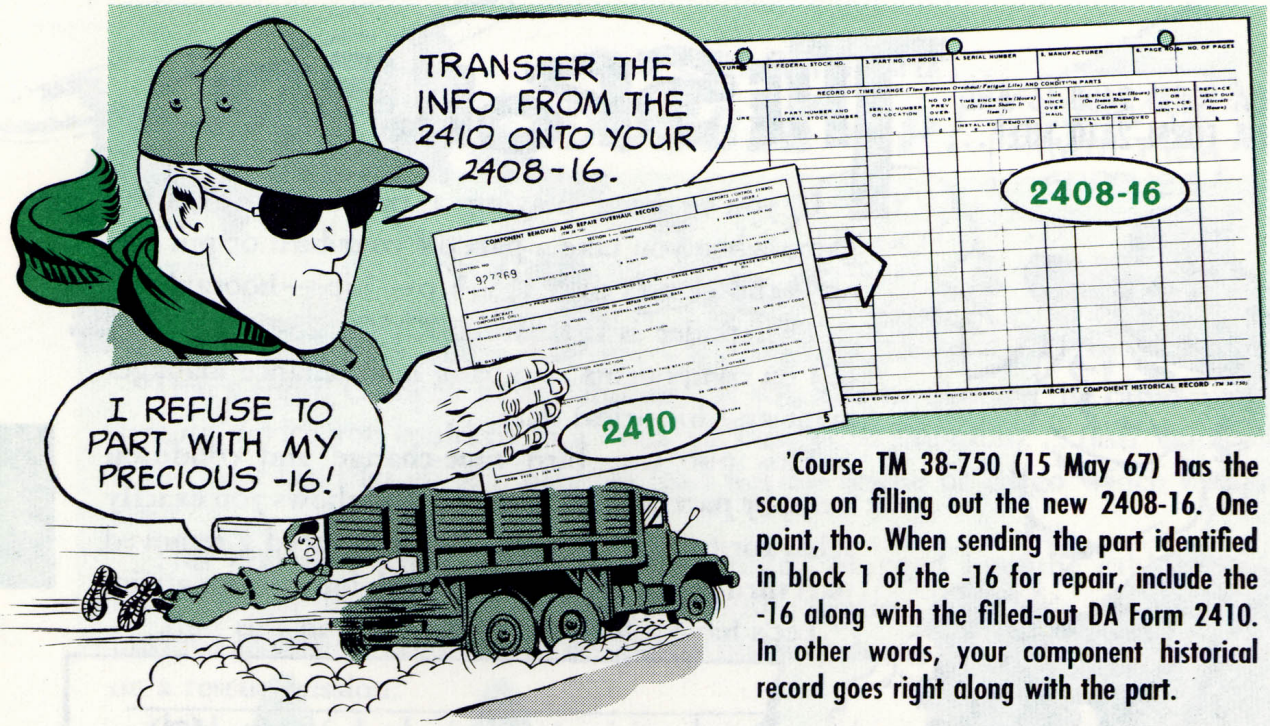
Federal stock No.	Centrally managed AR 711-45 (req. 2410-1)	Type item	Requires separate DA Form 2408-16	Enter on higher component—16	Enter on aircraft time change—16	Enter on aircraft condit comp—16	Local history (submission of DA Form 2410 not req)	Requires submission of DA Form 2410
1615-916-6159	*	TC	--	--	X	--	--	X
1615-923-[illegible]	*	TC	--	--	X	--	--	X
2925-924-[illegible]750	*	Cond	--	--	--	X	--	X
1615-[illegible]-8543	--	TC	--	--	X	--	X	
161[illegible]43-0807	*	TC	X	--	X	--	--	X
[illegible]-921-0627	--	TC	--	X	--	--	X	
[illegible]15-922-9388	--	TC	--	X	--	--	X	
1615-945-3906	*	TC	X	--	X	--	--	X
1615-948-3185	*	Cond	--	X	--	--	--	X
1615-948-3185	*	Cond	--	X	--	--	--	X
1680-922-9506	--	TC	--	X	--	--	X	

An asterisk in the centrally managed column means that a DA Form 2410-1 will be filled out (not by using units) but by your support, supply and maintenance units to reflect work stoppage, shipment and new location.

The hourly figures for the time change items are listed in the overhaul and retirement schedule of each bird organizational maintenance pub — no sweat!

As a mechanic maintaining the bird log book you're the key man in the parts record business. When you get a new part take all the information from the DA Form 2410 accompanying the part and put it on the DA Form 2408-16 (1 May 67). Then when the time rolls around for replacement again you'll have the info you need to fill out your DA Form 2410 . . . saves scrapping parts and much moola!!

PS MORE



'Course TM 38-750 (15 May 67) has the scoop on filling out the new 2408-16. One point, tho. When sending the part identified in block 1 of the -16 for repair, include the -16 along with the filled-out DA Form 2410. In other words, your component historical record goes right along with the part.

Your log book has 2408-16 forms for both time-change and condition items. The table in TB AVN 23-65 lists the form you use for each part, sure 'nuff.

The detail parts listed under the column, "Enter on higher component -16" get listed on the next higher assembly form.

The "X" in the column, "Requires separate -16" means that another -16 is filled out at any level of maintenance for recording new historical info.

Nomenclature		...ederal ...k No.	Centrally mana... AR 711-45 (re... 2410-1)	Type item	Requires separate DA Form 2408-16	Enter on higher component—16	Enter on aircraft time change—16	Enter on aircraft condit comp—16	Local history (submission of DA Form 2410 not req)	Requires submission of DA Form 2410
Shaft, Drive, Tail Rotor	369A5518	1615-916-6159	*	TC	--	--	X	--		X
	369A5502	1615-923-2219	*	TC	--	--	X	--	--	X
Starter-Generator	3...	...50	*	Cond	--	--	--		--	X
Swashplate Assy	3...	...43	--	TC	--	--		--	X	
Tail Rotor Assy	3...	...07	*	TC	X		X	--	--	X
—Blade, Tail Rotor	3...	...27	--	TC		X	--	--	X	
—Strap Retention, Tail Rotor	3...	...88		T...	--	X	--	--	X	
Transmission	3...			...	X	--	X	--	--	X
—Pump, Rotary	R...	...85	*	Cond	--	X	--	--	--	X
Power.	3...	...85	*	Cond	--	X	--	--	--	X
Tube Control Longitudinal Cyclic	3...	...06	--	TC	--	X	--	--	X	

Some parts listed on the -16 are for local history and, as the column shows, a DA Form 2410 is not needed.

Of course all the parts that take a DA Form 2410 are also listed in the TB.

TM 38-750 has the scoop on filling out the 2410 which is shipped with each part. Be sure you also use the condition tags called for in TB 750-126 (22 May 67) with your shipment.

When filling out the form fill in all the necessary blocks, including the failure code number that applies to the removed part. Eye all copies to make sure they're readable. And, any time a 2410 is damaged and you need to fill out a new one, be sure you line out the printed control number and write in the old control

number so that the part doesn't get "lost" in the supply system.

Now, you only have to fill out one 2410 for a major component removed—not a dozen. On an engine change, for example, include one 2410 for the engine along with the 2408-16 form, listing all reportable items in accordance with TB 23-65.

Then, if any of those engine accessories are taken off along the line to depot, the info on each accessory will be on hand and can be updated. This is mighty important because an accessory removal means making out another 2410 for that accessory.

LOH BATTERY

If you need a 19-cell, 28-volt nickel cadmium BB-641/A battery for your Cayuse (OH-6A) mini-copter, use FSN 6140-930-5130. If all you need is one cell, use FSN 6140-933-4286. They're listed in SC 6135/40-ML (Dec 66).

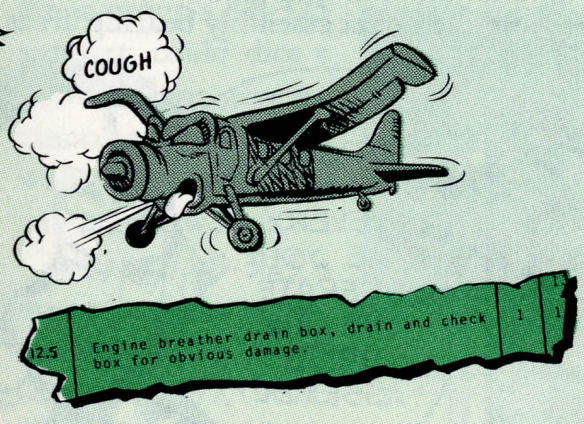
STILL EVERY 12½

TB 55-6650-300-15 (26 Jun 67) latest edition of the spectrometric oil analysis pub, covers all points except how often to take turbine engine oil samples—which is every 12½ hours. Make it the first item on your PMI checklist, then about halfway between PMI's.

TORQUE TALK

Any time you air types don't see a torque value given in a maintenance pub, the age-old rule still goes—use standard torque as called out in Tables 4, 5 of TM 55-405-2 (11 Jul 66) on aircraft hardware. Special torque values for nuts are always given right in the bird pub text.

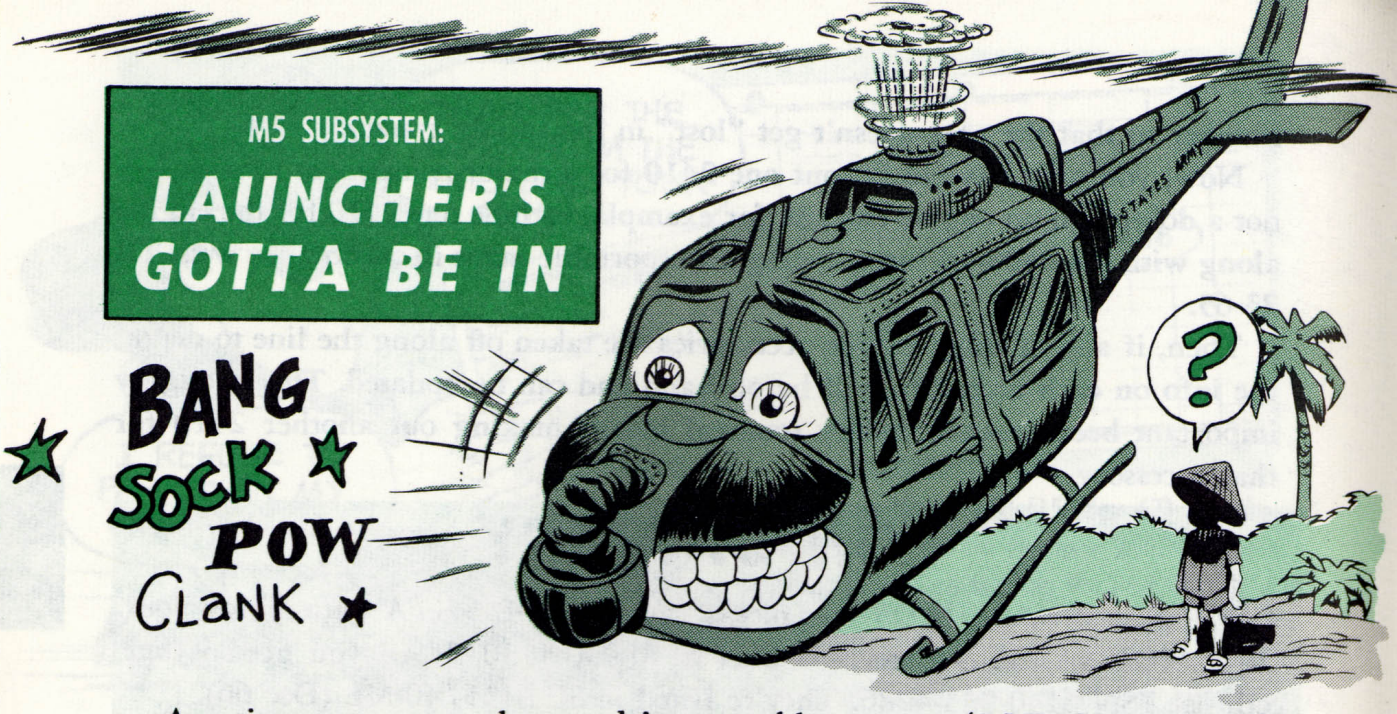
USE LATEST CHECKLISTS



Hey there, Otter (U-1) types! To keep your bird in the pink be sure you keep the latest checklists in your log book. Sequence 12.5 in TM 55-1510-205-20PMD (18 May 67) and the Intermediate checklist now call for draining and checking the engine breather drain box.

M5 SUBSYSTEM:

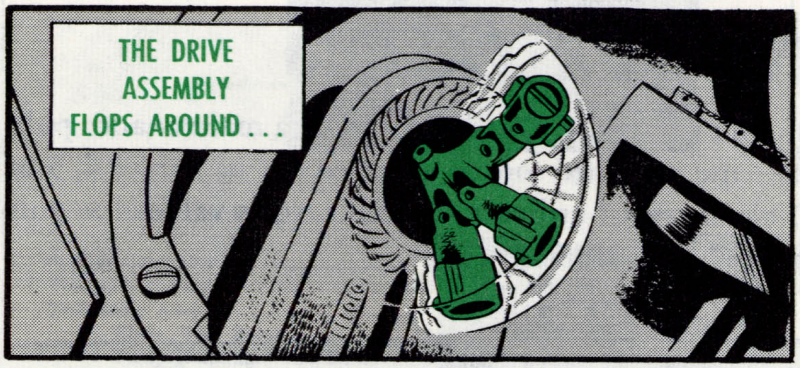
LAUNCHER'S GOTTA BE IN



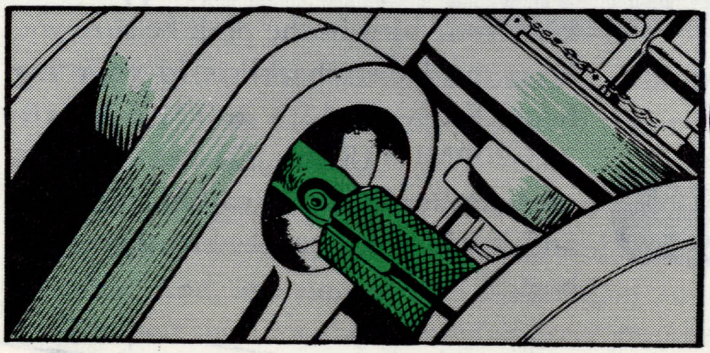
Any time you operate the gun-drive assembly on your 40-MM Huey-mounted M5 turret assembly, be mighty sure that launcher's installed.

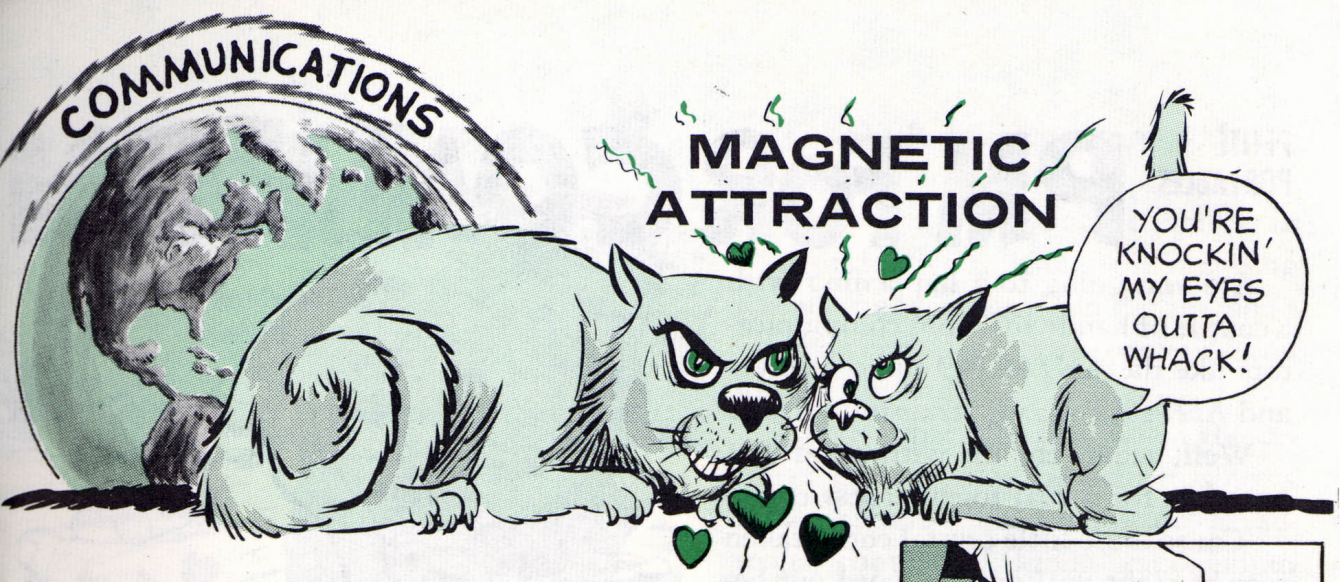
Never operate the drive assembly with the launcher removed.

Here's why: If you leave the launcher out, there's nothing for the U-joint to be seated against except the drive assembly. So, when the sleeve and drive blade of the U-joint get revved up, they beat the front housing of the drive assembly something terrible.

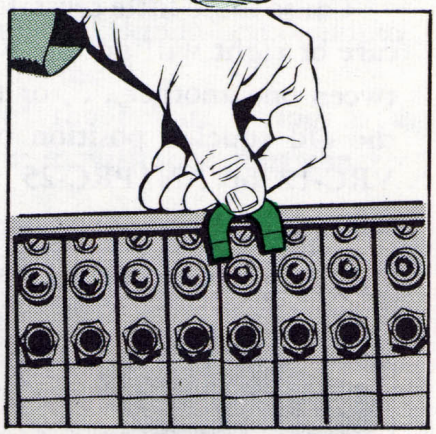


Result: The housing assembly gets ruined, the sleeve and drive blade get beat to a nub, and metal chips by the jillion fly into the turret assembly bearing areas . . . which can short out your system, but good.





MAGNETIC ATTRACTION

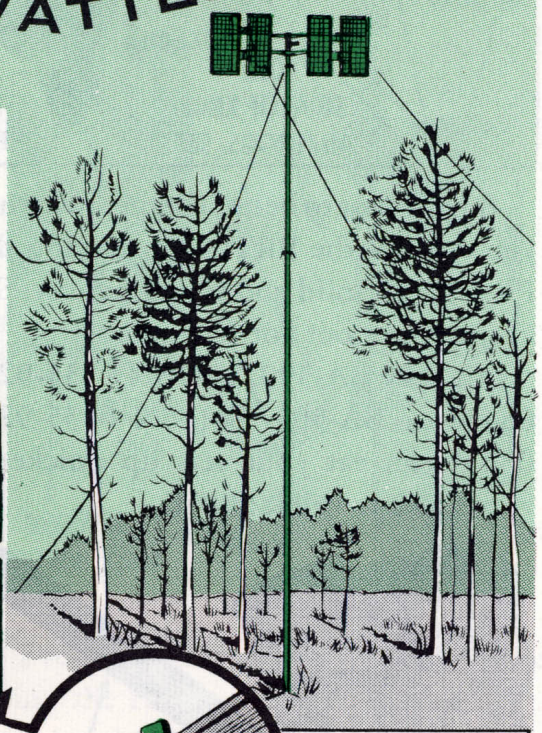


Are those hermetically sealed switchboard cateyes on the blink?

Well, if you can't get 'em to roll around for you in your SB-22/PT or SB-86/P switchboard, hold a small magnet above the line signal. This should make the eye roll back.

It's tabu to bang on the switchboard to free the line signal. You could wind up with more than a cateye headache.

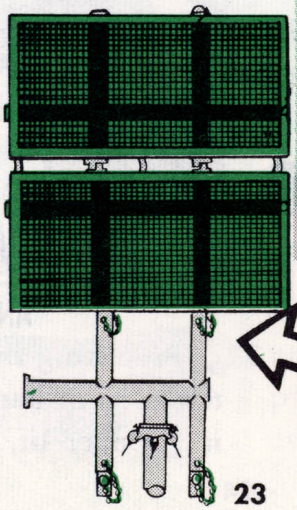
FLOPPY FLYSWATTER?

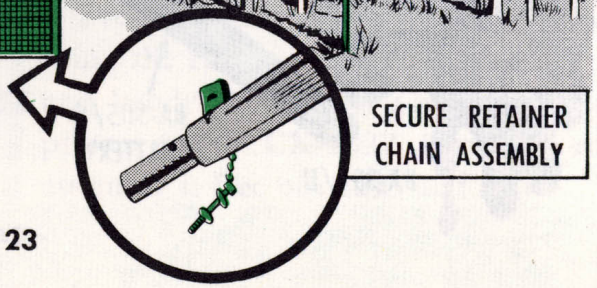


Before you boost those flyswatter antennas up to flap in the breeze make sure they're snugged up with retainer chain assembly (FSN 5820-776-1909).

A jiggling AT-414/TRC antenna reflector, toppling off the OA-1389 antenna group's AB-325 support, could dice a snowman, or give an innocent bystander a waffle-like wallop . . . and maybe worse.

If the AB-325's missin' a chain assembly, you'll find 'er listed on page 697 in SC 5820-IL-2 (Oct 66).





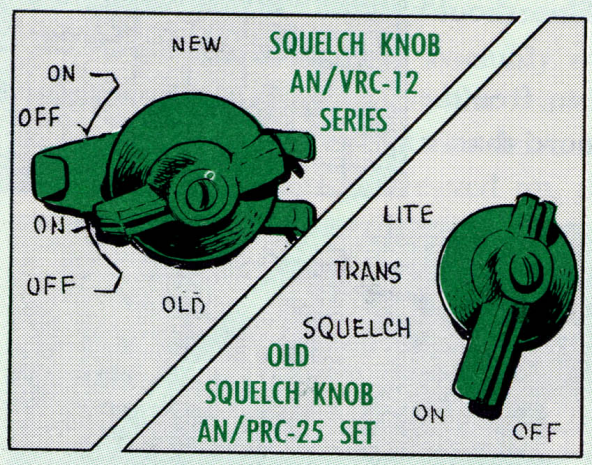
PETITE PORTABLES

PM FOR COMMUN

Are you going to a happening with a couple of handy little FM communicators like the AN/PRR-9 radio receiver and AN/PRT-4 radio transmitter sets?

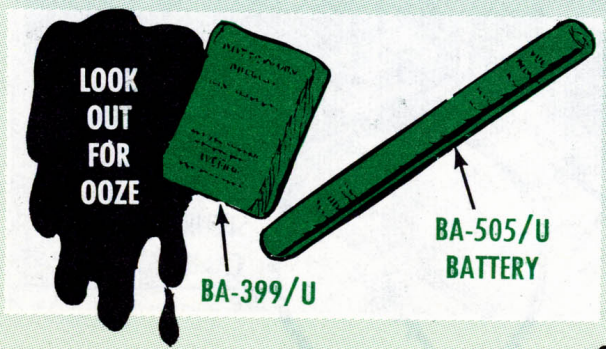
Well, team 'em up with good PM practices for a real togetherness event.

'Cause those little crystal cuties taken care of right will get the word out between one another . . . or tied in with the old squelch position of the AN/VRC-12 or AN/PRC-25 series radio sets.



A big boost to better contact, whether you're usin' the PRT-4 or carrying the PRR-9, is a solid and sound battery. So, keep an eye out for leakage.

An oozy BA-399/U (FSN 6135-926-0845) or BA-505/U (FSN 6135-926-0844) can eat your sets up quicker'n you'd like to think about.



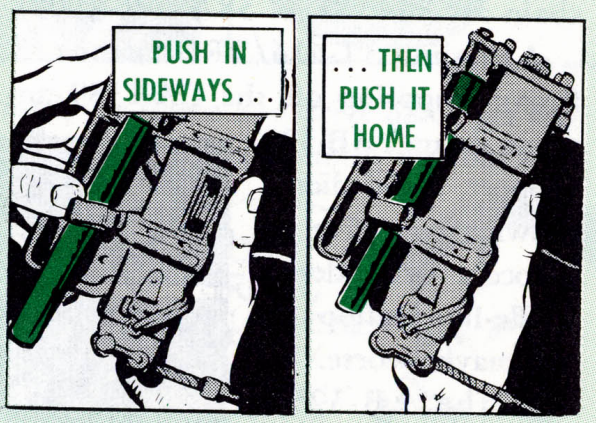
O'course, if your radios are put up for a day or so, remove the batteries like it says in TM 11-5820-549-12 (Oct 66).

One point or three about putting in the BA-505.

Hold it parallel to the PRR-9 and slide the battery sideways into the battery retaining clip.

Then, line up the battery contact pins on the receiver with the BA-505 connector and push straight in.

This'll save the battery from too much scraping and gouging by the clip.



ANTENNA TIPS

Protecting the PRT-4's AS-1999 antenna from bangs and dents will give it a longer life.

PETITE PORTABLES

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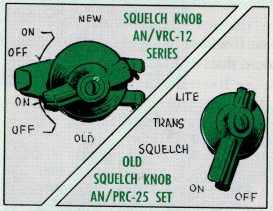

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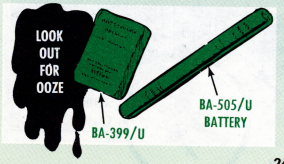

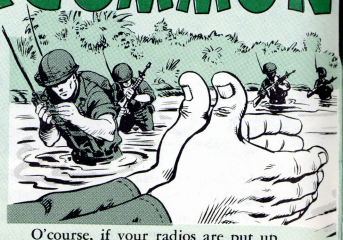

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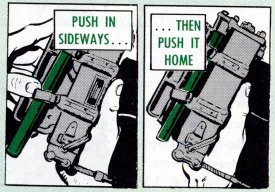

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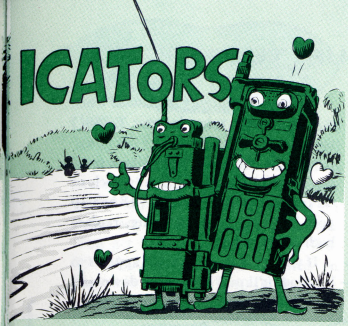


It's a little different story with the AS-1998 antenna.

Whether it's on your helmet or in your pocket see to it that the retaining screw is finger tight when the antenna's set in a vertical position—or you could lose the antenna.

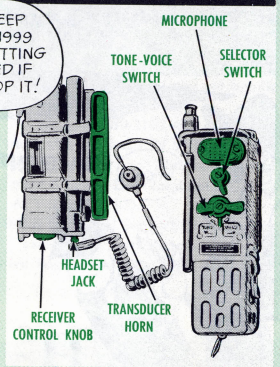
This is especially true when the receiver is clipped to the helmet, since a loose antenna could get lost or the antenna could fall kinda catawampus against the helmet.

Instead of the helmet acting as a counterpoise it will short out the receiver.

So, clip the transmitter lanyard to a button hole in your fatigues or to the harness slide.

When you're pulling up the antenna for talking, give it a thumb start from the bottom, then pull it to its full height. That little push takes a lot of strain off the telescopic sections of the antenna.

KEEP MUD & DIRT OFF THESE PLACES!!



Even though you may not always be using the H-264 headset, keep it clean and handy. Be sure the ear holder is present and the CX-1022 electrical cord assembly is free of cracks and frays.

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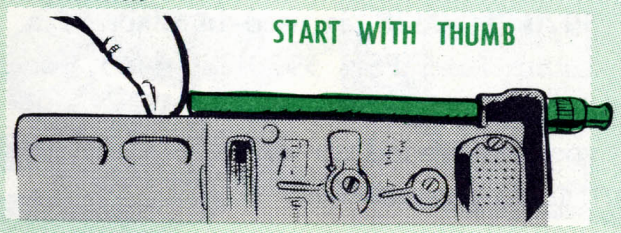

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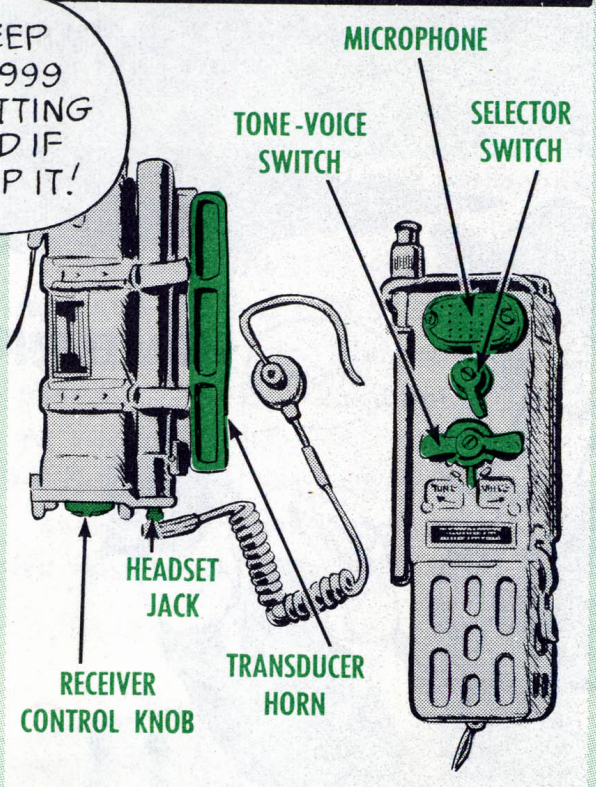

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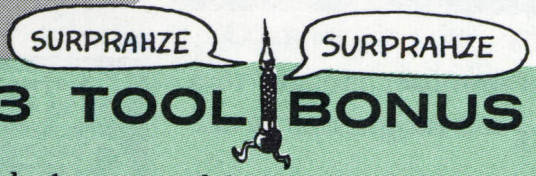
TEAMING UP TUBES

Teamwork's mighty important when it comes to the tubes in your T-368( ) transmitter.

Like the two 3B28 high voltage rectifier tubes in the power supply deck of the transmitter. If either the V18 or V19 goes bad and needs replacing, replace both of the tubes.

If you leave the one which appears to be good, it'll pull the power down and shorten the life of the new replacement.



TE-123 TOOL BONUS

Do you need a switchboard plug screwdriver in your TE-123 tool equipment set, FSN 5180-408-1881? Well, you got it. The 4½-in lg, $^{11}/_{32}$-in dia stainless steel screwdriver goes by FSN 5120-708-5314. It's on page 4.196 of C5120-IL-A (Jul 67), Vol 2.

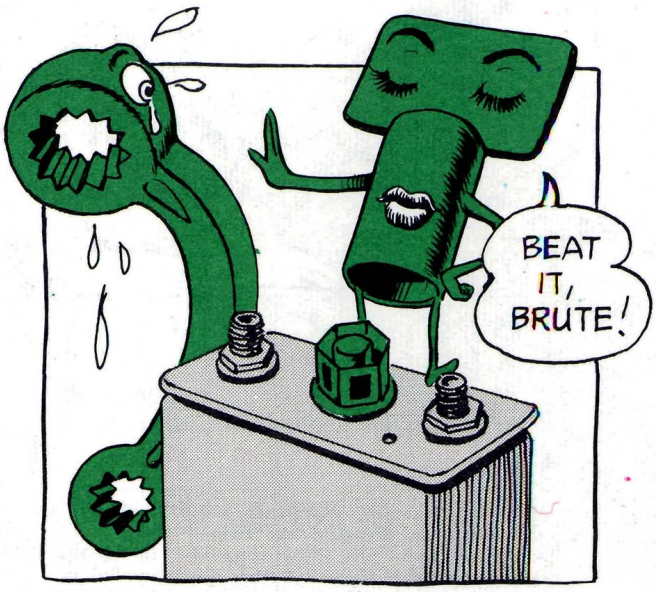
OVERFUSE BLUES

Never pull a switcheroo of fuses in a signal converter and terminal.

There might be a lotta look-alike between the TH-5/TG telegraph terminal and TA-182/U telegraph-telephone signal converter, but that's about as far as it goes.

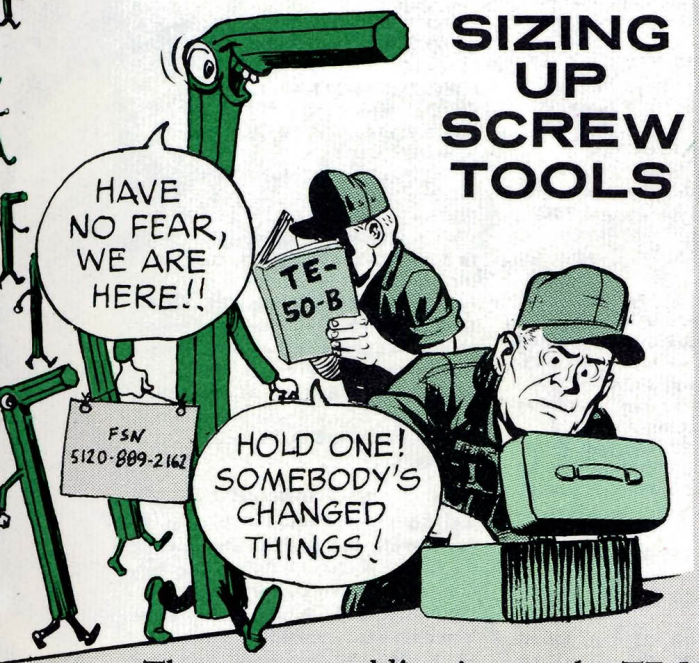
When a TH-5's 1.5-amp fuse, FSN 5920-280-9328, is used in place of a 1-amp fuse, FSN 5920-280-4465, for the TA-182 you've overfused . . . and you could wind up with a burned out transformer.

TOOL WITH A SOFT TOUCH

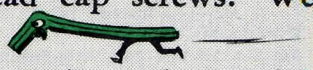


Keep those metal mauling tools away from your BB-418/U battery cell vent caps, or you'll mutilate 'em. When you're removing or replacing the power packs' caps for your AN/PRC-74( ) radio set, reach for a nylon wrench. You get it by asking for FSN 6140-798-3592, and you find it listed on page 145 of SC 6135/40-IL (Jan 67).

SIZING UP SCREW TOOLS



Hey, teletypewriter repairman-type, esteemed user of the TE-50-B tool equipment! You have the feeling somebody has changed the sizes of some of those socket-head cap screws? Well, they have.

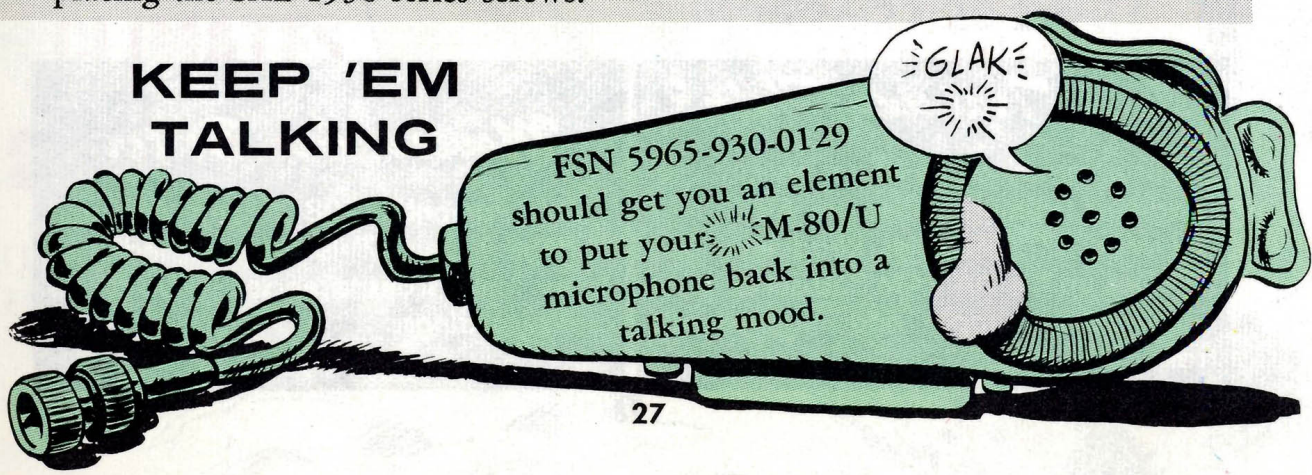


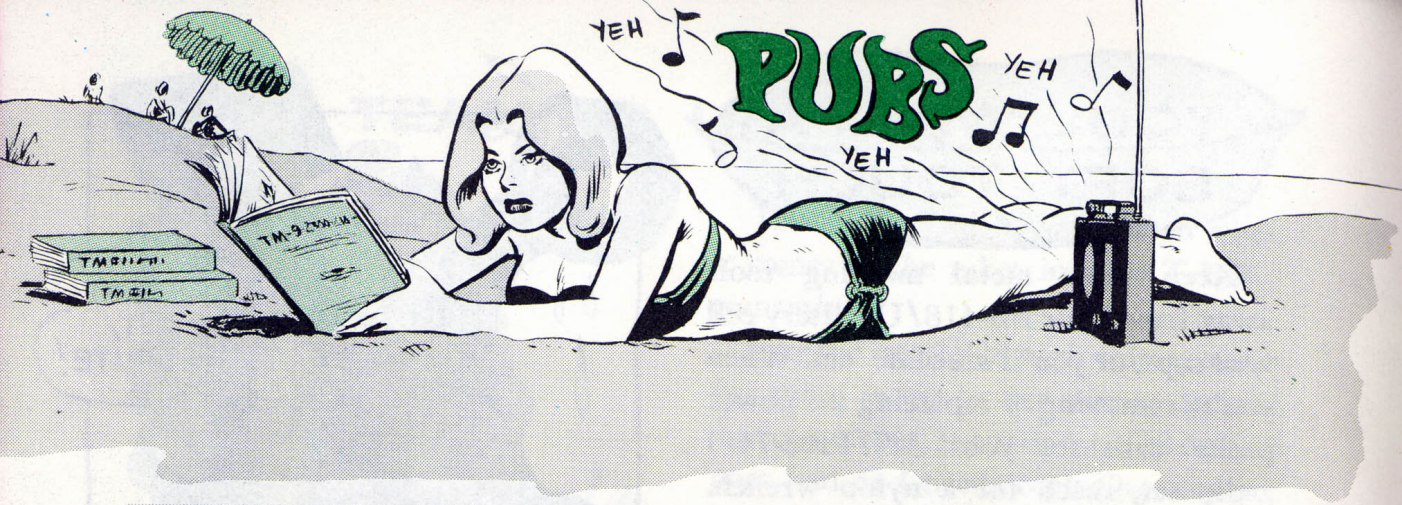
But don't sweat it, you're gettin' a couple of L-shaped socket head screw keys, hex, short-series type, to handle the job.

FSN 5120-889-2162 will get a 7/64-in nom size one and FSN 5120-889-2163 is for a 9/64-in one. They're listed on page 4.110 in DoD catalog C5120-IL-A, Vol 2, (Jul 67).

The poop on adding 'em to the TE-50-B is Richmond Support Center supply letter, SSMCR-SCC No. 9 (7 Apr 65), 'cause all teletypewriters are being supplied with SAE (Society of Automotive Engineers) series 1960 screws, replacing the SAE 1936 series screws.

KEEP 'EM TALKING





This is a selected list of recent pubs of interest to organizational maintenance personnel. The list is compiled from recent AG Distribution Centers Bulletins. For complete details see DA Pam 310-4 (May 67), and Ch 1 (Jul 67), TM's, TB's, etc.; DA Pam 310-6 (Jul 67) and Ch 1 (Oct 67), SC's and SM's; DA Pam 310-7 (Jul 67), MWO's.

TECHNICAL MANUALS

TM 3-1040-209-20P, Jul, Flame Thrower, Mechanized, M10-8.

TM 5-2410-211-15, C2, Oct, Tractor, FT DED, (Caterpillar Mdl D4).

TM 5-3805-205-25P, C1, Oct, Scraper, Earth Moving, Towed, (Curtis-Wright CWT-18-M).

TM 5-4320-201-25P, Aug, Pump, Centrifugal, Skid Mtd, Gas Driven (Carver Mdl K 300G) W/Wisconsin Eng Mdl Aenld.

TM 5-4610-204-12, C5, Sep, Water Purification (Met-Pro Model 1500-2600).

TM 5-4930-200-25P, Aug, Lubricating & Servicing Unit; Power Oper; Lubrication Storage Tank, Trailer Mtd (Gray Co., Mdl 251-325) Skid Mtd (Gray Co., Mdl 251-315).

TM 5-6665-203-25P, Aug, Detecting Set, Mine: Bridge Type Detector, Truck Mtd (Wurlitzer Mdl WC-324).

TM 9-1430-250-15P/7/1, Aug, Nike-Herc Imp.

TM 9-1430-250-15P/8/1, Aug, Nike-Herc Imp.

TM 9-2300-224-10/2/1, C6, Sep, Carriers M113A1, M577A1, M106A1, M132A1, M125A1, M548.

TM 9-2320-222-20, C1, Aug, M88 Recovery Vehicle.

TM 9-4935-253-15P/2/1, Aug, Nike-Herc.

TM 10-3930-255-20P, C1, Sep, Truck, Forklift, Army Mdl MHE-197, Baker FTD-020-EE.

TM 10-3930-603-12, Sep, Tractor, Wheeled, Whse: GED, Army Mdl MHE-201 Northwest Motor Co. Mdl JG-40PT4.

TM 10-8465-203-23, C1, Sep, Container and Harness Assy, Parachutist's Weapons and Individual Equipment.

TM 11-5895-356-12, Aug, AN/TSC-38A Communications Central.

TM 11-5895-456-15, Jul, Medium Capacity Tactical Radio Relay System.

TM 11-5895-558-15, Aug, AN/TRC-146 Radio Set.

TM 11-6130-254-15, Sep, Lambda Power Supply.

TM 11-6625-433-15, Aug, AN/URM-98 and AN/URM-98A.

TM 11-6625-1613-15, Sep, Hewlett-Packard Noise Figure Meter Mdl 342A and Noise Source Mdl 349A.

TM 11-6660-235-12, Aug, AN/GMM-7 Windspeed Simulator.

TM 55-1520-209-20, C9, Oct. CH-47.

TM 55-1520-210-20, C2, Oct, UH-1D.

TM 55-1520-210-20, C3, Oct, UH-1D.

TM 55-1520-210-20P-2, Aug, UH-1A-1B-1C-1D.

TM 55-1520-210-20P-3, Aug, UH-1A-1B-1C-1D.

TM 55-1520-211-20, C4, Oct, UH-1A-1B.

TM 55-1520-221-20, C3, Oct, AH-1G.

TM 55-1520-221-20, C4, Oct, AH-1G.

TM 55-1520-221-20P, C2, Oct, AH-1G.

TM 750-130, Sep, Procedures for Rapid Deployment Redeployment, and Retrograde of Power Equipment Electronic.

MODIFICATION WORK ORDERS

MWO 55-1510-209-20/1, Aug, U-21A. (URGENT)

MWO 55-1510-209-20/2, Sep, U-21A. (URGENT)

MWO 5-6100-202-20/1, Oct, Pershing.

MWO 9-1220-203-50/9, C1, Sep, Op/Org, Tank, Combat 90mm M48A2C.

MWO 9-1240-273-40/1, Sep, Op/Org, Howitzers, M108, M109.

MWO 9-1240-274-40/2, Oct, Howitzers M108, M109.

MWO 9-1240-322-30/1, Sep, Tank, Combat M60, M60A1, and Combat Engineer Vehicles M728, T118E1.

TECHNICAL BULLETINS

TB 55-1500-206-30/1, C2, Oct, UH-1A-1B-1C-1D, AH-1G.

TB 55-1520-209-20/23, Oct, CH-47.

TB 750-92-10, Oct, Gen Info applicable to ALL organizations which have a missile, rocket and/or AD mission.

TB 750-95-10, Sep, Maint Expenditure Limits.

TB 750-105, C1, Sep, Engineer Shipment.

MISCELLANEOUS

AR 750-29, Sep, Maint of Dept of the Army Watercraft and Amphibians.

DA Pam 44-1, Jul, Air Defense Artillery Crewman Training Guide.

LO 3-1040-210-12, Aug, Compressor, Flamethrower, AN-M4.

SB 3-1040-15, Sep, Hose, Fuel, Port Flame Thrower, M8 Storage Serviceability Standard.

TC 23-20, Aug, M16A1 Rifle Training.

TOE 11-358G, Jun, Signal Messenger Company.

Need Training Help?

For a ready-made chart on materiel readiness training guides see AR 350-13 (22 Mar 67), Materiel Readiness. The AR lines up the DA PAM 350-series pubs which cover supply and maintenance training courses.

Movies Are Better

DA Pamphlet 108-1 (Sep 66) and Change 1 (Jun 67) is the latest index of Army films, transparencies, GTA charts and recordings.

JOE'S DOPE
CONNIE'S 1968 CALENDAR
JANUARY
S M T W T F S
1 2 3 4 5 6
1 2 3 4 5 6
7 8 9 10 11 12 13
7 8 9 10 11 12 13
14 15 16 17 18 19 20
14 15 16 17 18 19 20
21 22 23 24 25 26 27
21 22 23 24 25 26 27
28 29 30 31
28 29 30 31
Play it clean and cool: Drain your fuel filters every day.
FEBRUARY
S M T W T F S
1 2 3
32 33 34
4 5 6 7 8 9 10
35 36 37 38 39 40 41
11 12 13 14 15 16 17
42 43 44 45 46 47 48
18 19 20 21 22 23 24
49 50 51 52 53 54 55
25 26 27 28 29
56 57 58 59 60
IN EXTREME CLIMATES
EQUIPMENT NEEDS
EXTRA CARE
CHECK
BATTERIES – COOLING SYSTEMS–
ELECTRONIC EQUIPMENT AND
ALL LUBRICATION

PM on your weapon is the best insurance for living you'll ever get.

MARCH

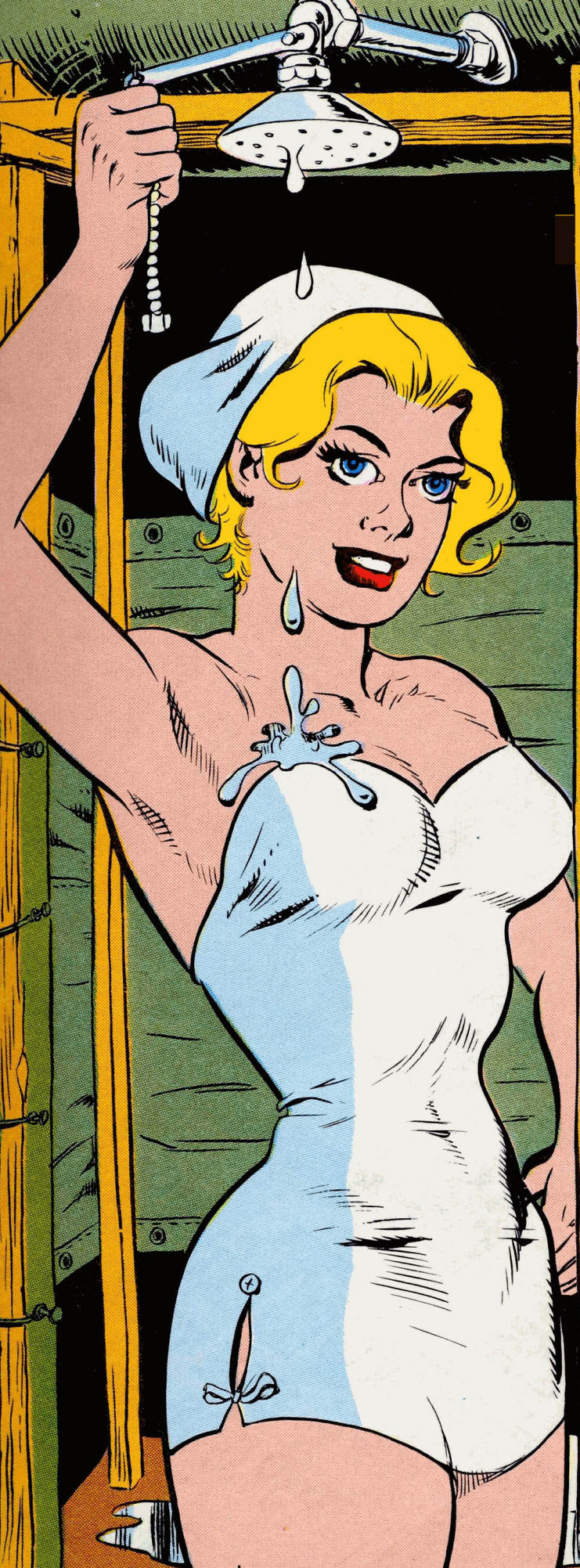
S	M	T	W	T	F	S
					1 61	2 62
3 63	4 64	5 65	6 66	7 67	8 68	9 69
10 70	11 71	12 72	13 73	14 74	15 75	16 76
17 77	18 78	19 79	20 80	21 81	22 82	23 83
24 84	25 85	26 86	27 87	28 88	29 89	30 90
31 91						

GOOD PM TAKES THE WORRY OUT OF BEING CLOSE

APRIL

S	M	T	W	T	F	S
	1 92	2 93	3 94	4 95	5 96	6 97
7 98	8 99	9 100	10 101	11 102	12 103	13 104
14 105	15 106	16 107	17 108	18 109	19 110	20 111
21 112	22 113	23 114	24 115	25 116	26 117	27 118
28 119	29 120	30 121				

Success Formula: Clean ammo in a clean weapon.



Dust and dirt and mud and muck . . . can really put you out of luck.

Unroll and air stored canvas regularly.

MAY

S	M	T	W	T	F	S
			1 122	2 123	3 124	4 125
5 126	6 127	7 128	8 129	9 130	10 131	11 132
12 133	13 134	14 135	15 136	16 137	17 138	18 139
19 140	20 141	21 142	22 143	23 144	24 145	25 146
26 147	27 148	28 149	29 150	30 151	31 152	

COOLING SYSTEMS NEED CONSTANT CHECK

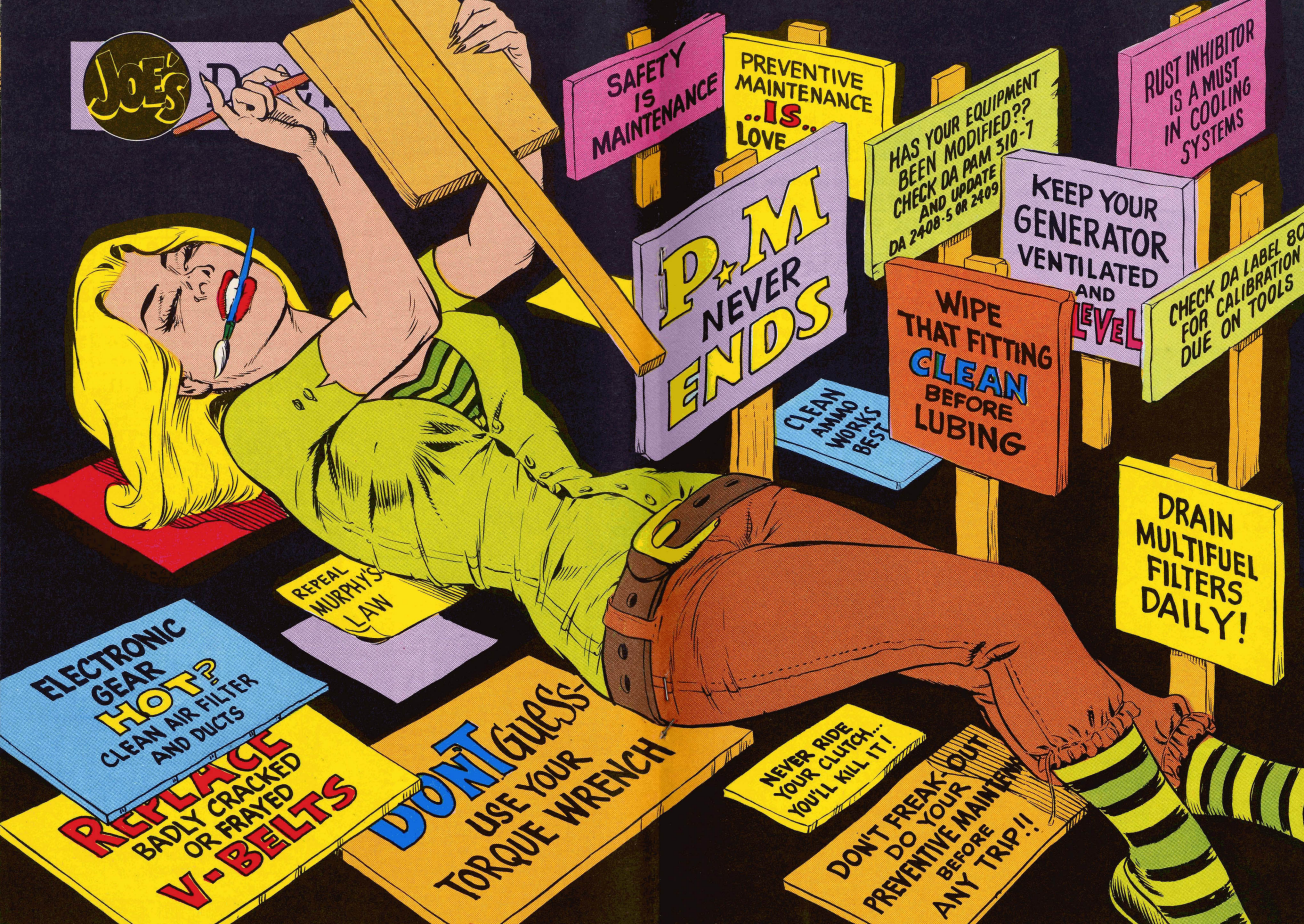
TWICE DAILY IS NOT ENOUGH

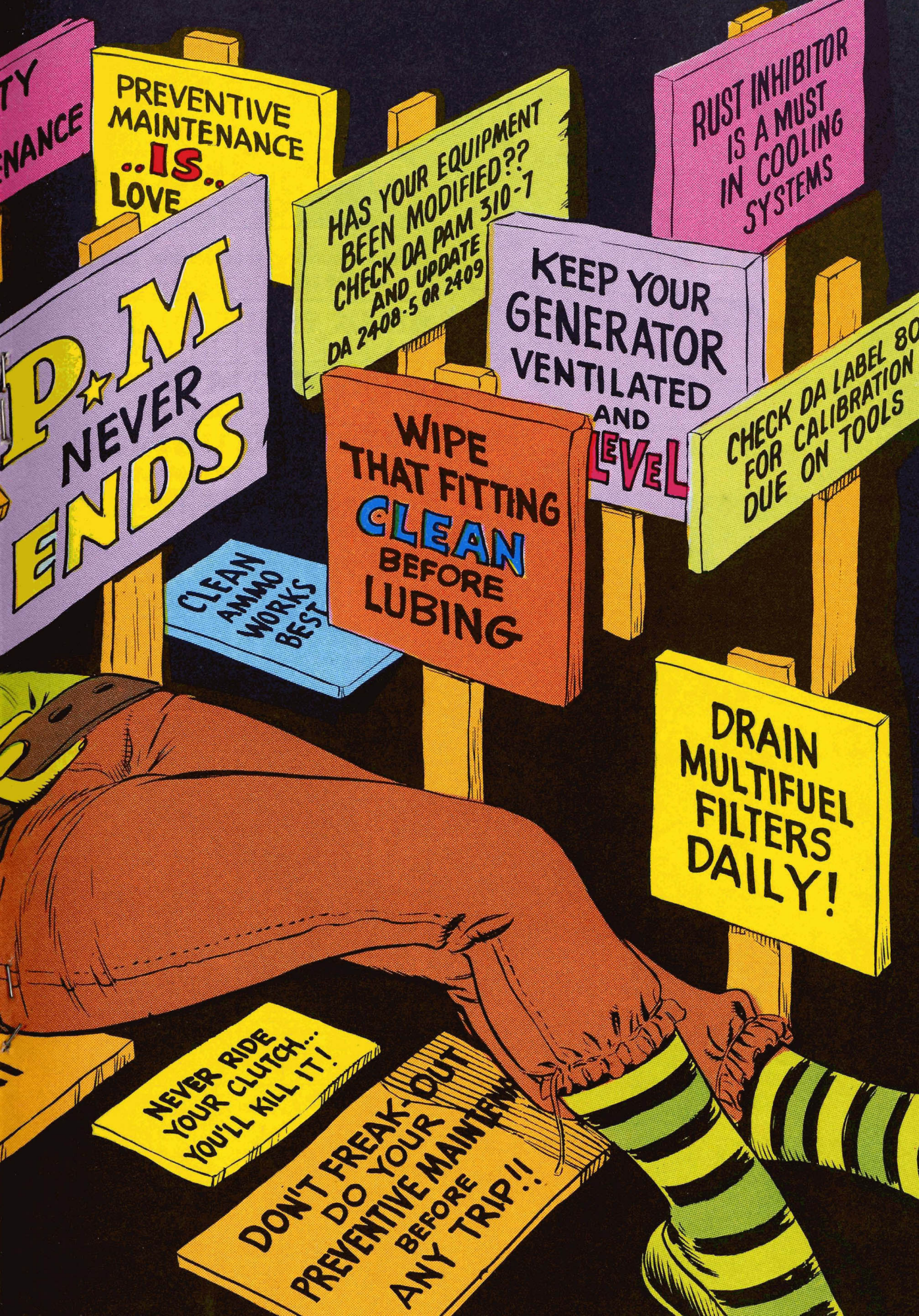
JUNE

S	M	T	W	T	F	S
						1 153
2 154	3 155	4 156	5 157	6 158	7 159	8 160
9 161	10 162	11 163	12 164	13 165	14 166	15 167
16 168	17 169	18 170	19 171	20 172	21 173	22 174
23 175	24 176	25 177	26 178	27 179	28 180	29 181
30 182						

Battery Cables braced and tight? Terminals greased?

JOE'S
SAFE
IS
MAINTE
REPEAL
MURPHY'S
LAW
ELECTRONIC
GEAR
HOT?
CLEAN AIR FILTER
AND DUCTS
REPLACE
BADLY CRACKED
OR FRAYED
V-BELTS
DON'T GUESS-
USE YOUR
TORQUE WRENCH


Joe's
SAFETY IS MAINTENANCE
PREVENTIVE MAINTENANCE ..IS.. LOVE
HAS YOUR EQUIPMENT BEEN MODIFIED?? CHECK DA PAM 310-7 AND UPDATE DA 2408-5 OR 2409
RUST INHIBITOR IS A MUST IN COOLING SYSTEMS
P.M NEVER ENDS
KEEP YOUR GENERATOR VENTILATED AND
CHECK DA LABEL 80 FOR CALIBRATION DUE ON TOOLS
WIPE THAT FITTING CLEAN BEFORE LUBING
CLEAN AMMO WORKS BEST
REPEAL MURPHY'S LAW
DRAIN MULTIFUEL FILTERS DAILY!
ELECTRONIC GEAR HOT? CLEAN AIR FILTER AND DUCTS
REPLACE BADLY CRACKED OR FRAYED V-BELTS
DON'T GUESS USE YOUR TORQUE WRENCH
NEVER RIDE YOUR CLUTCH... YOU'LL KILL IT!
DON'T FREAK-OUT DO YOUR PREVENTIVE MAINTENANCE BEFORE ANY TRIP!!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BODY PAINT IS NOT ALL THERE IS TO MAINTENANCE

Before starting your vehicle, turn off the radio!

JULY

S	M	T	W	T	F	S
	1 183	2 184	3 185	4 186	5 187	6 188
7 189	8 190	9 191	10 192	11 193	12 194	13 195
14 196	15 197	16 198	17 199	18 200	19 201	20 202
21 203	22 204	23 205	24 206	25 207	26 208	27 209
28 210	29 211	30 212	31 213			

Radiators need clean cores to keep system clean.

AUGUST

S	M	T	W	T	F	S
				1 214	2 215	3 216
4 217	5 218	6 219	7 220	8 221	9 222	10 223
11 224	12 225	13 226	14 227	15 228	16 229	17 230
18 231	19 232	20 233	21 234	22 235	23 236	24 237
25 238	26 239	27 240	28 241	29 242	30 243	31 244

Fuels rush in . . . but wise men keep AVGAS out of ground engines.

Keep your head—DOWN—when getting in or out of choppers.
SEPTEMBER
S M T W T F S
1 2 3 4 5 6 7
245 246 247 248 249 250 251
8 9 10 11 12 13 14
252 253 254 255 256 257 258
15 16 17 18 19 20 21
259 260 261 262 263 264 265
22 23 24 25 26 27 28
266 267 268 269 270 271 272
29 30
273 274
On any equipment, it's the PM that counts.
OCTOBER
S M T W T F S
1 2 3 4 5
275 276 277 278 279
6 7 8 9 10 11 12
280 281 282 283 284 285 286
13 14 15 16 17 18 19
287 288 289 290 291 292 293
20 21 22 23 24 25 26
294 295 296 297 298 299 300
27 28 29 30 31
301 302 303 304 305
AVOID
FOREIGN
OBJECT
DAMAGE
COUNT
YOUR
TOOLS

THE BEST GIFT YOU CAN GIVE IS A WHOLE YEAR OF GOOD PM!!
NOVEMBER
S M T W T F S
1 2
306 307
3 4 5 6 7 8 9
308 309 310 311 312 313 314
10 11 12 13 14 15 16
315 316 317 318 319 320 321
17 18 19 20 21 22 23
322 323 324 325 326 327 328
24 25 26 27 28 29 30
329 330 331 332 333 334 335
Know your lead-acid battery: Read TM 9-6140-200-15.
DECEMBER
S M T W T F S
1 2 3 4 5 6 7
336 337 338 339 340 341 342
8 9 10 11 12 13 14
343 344 345 346 347 348 349
15 16 17 18 19 20 21
350 351 352 353 354 355 356
22 23 24 25 26 27 28
357 358 359 360 361 362 363
29 30 31
364 365 366
Keep generator oil level up — Overload down.

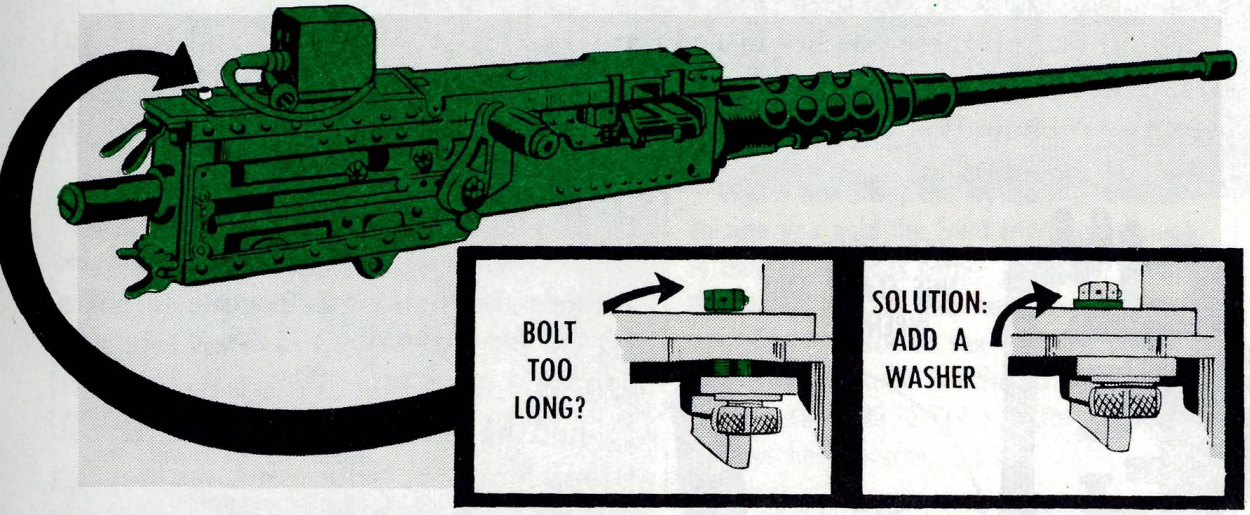
MAKE TIME

Here's the picture.

You get a new solenoid assembly for one of your quad M2 .50-cal machine guns. Once it's on the weapon, though, you can't time the shooter because the timing adjusting nut will work for only a coupla clicks.

Would you believe a too-long bolt is the reason? Could be.

The rear bolt that helps hold the solenoid assembly to the top plate might be a hair too long—just enough to push down on the spring for the adjustable trigger bar stop and keep the nut from turning more than a few notches.

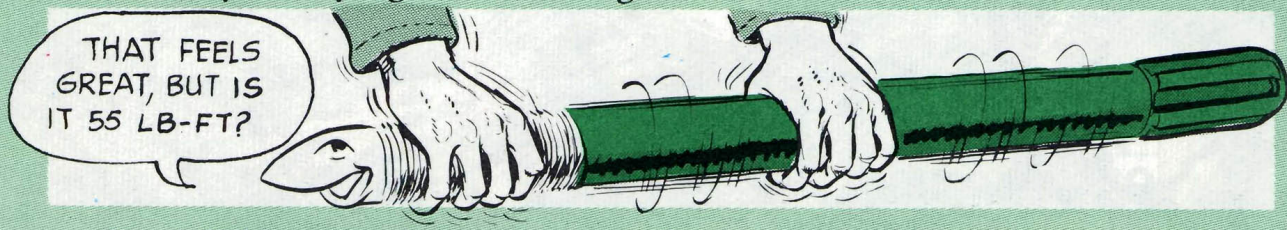


Using the old rear bolt instead of the new one furnished with the solenoid is one answer, but it's just as easy to slip a lock washer under the head of the new rear bolt to pull it away from the spring. The washer is also fast—if you need your machine gun now.

See your armorer the first chance you get. He can also shorten the bolt with a file.

TORQUE THAT ROCKET

Hey, you rocketeers, stop those 2.75-in folding fin aerial rockets from coming apart in flight, will you, by making sure the warheads are tightened to the motor body exactly right . . . meaning to 55 lb-ft.



How? With a nose-fuze torque wrench, that's how!

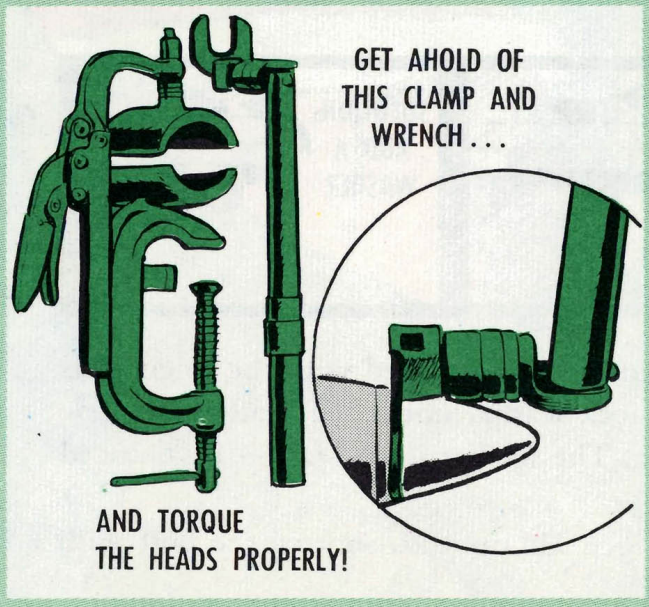
Sure, there's such a critter and your outfit can either get hold of one or get one made, depending on the circumstances.

Tip: For quicker results, local fabrication's probably your best bet.

Here's the scoop:

If your unit has the facilities for making this device, here's what's needed: a ½-in torque wrench (FSN 5120-595-9069); a socket wrench adapter with ⅜-in male to female square ends (FSN 5120-240-8702); a modified socket crowfoot attachment (FSN 5120-184-8411), and a set of drawings.

You'll find all these goodies in Fed Cat C5120-IL-A, Volumes I and II (1 Jul 67). You can get the drawings under the name Drawing No. APE2075 from APSA — Ammunition Procurement and Supply Agency, ATTN: SMUAP-FFE, Joliet, Illinois 60436.



If your unit can't make the device, here's what you do: Requisition one under the name of Torque Fixture, (FSN 4925-935-0935 . . . Part No. APE 2075), from APSA at the Joliet address. You'll have to explain on the requisition, however, why your outfit can't fabricate the device.

Incidentally, this fixture is free to Army units, but Marine and other outfits will be charged $50 apiece for 'em.

The pub that comes with each tool will show you how to use and care for it.

FOR YOUR M109 HOWITZER . . .

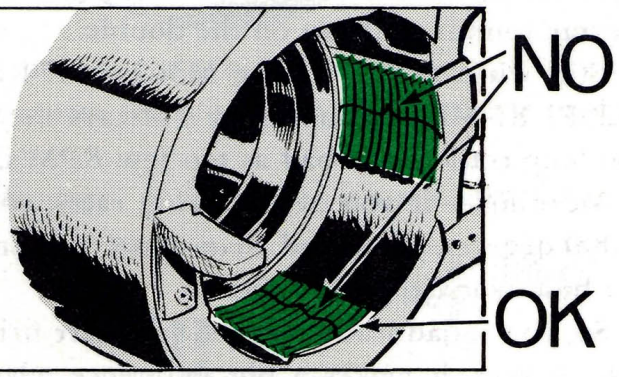
LOAD A LA MODE

Y'say the breech ring threads on your M109 155-MM howitzer took quite a beating from hand loading and ramming (both manual and hydraulic) and you're wondering if maybe the breech ring should be replaced. Is that it?

OK, let's take a look-see.

If the rearmost thread segment there at 6 o'clock is cracked or burred or even missing, mox nix. The segment's still A-1 for action. No replacement needed.

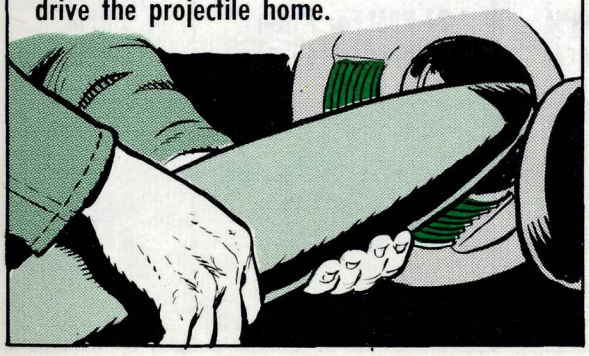
But, if any other thread segment — any single one of 'em — is cracked, get support to replace the breech ring pronto. Could save you and your buddies a lot of woe.



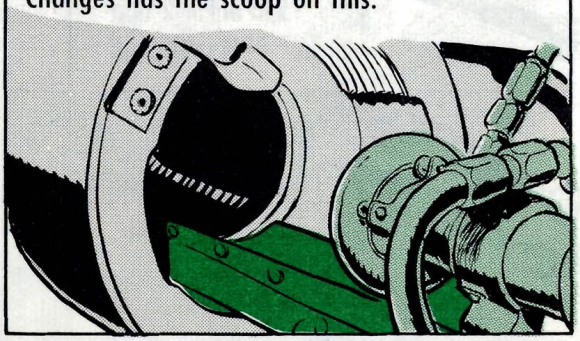
Now, most of this damage to breech ring threads comes from dropping a projo on 'em or slamming 'em with the ramming rod or the rammer tray, right?

So, here're a couple of tips to prevent this damage:

When hand loading: Elevate the howitzer about 14 to 17 degrees (250 to 300 mils) instead of the 7 degrees the TM recommends. This way you won't have to lift so high to clear the threads as you seat the round. Then be real careful you don't smash that bronze-headed rammer against the threads when you drive the projectile home.



When handling the hydraulic rammer: Be sure you hold the front tray high enough to clear the threads before you lower it onto the breech ring. If you have trouble doing this, double check to see that the rammer counterbalance cable is adjusted right. Fig 93 in your TM 9-2350-217-10 (Nov 64) w/3 Changes has the scoop on this.



81-MM MORTAR —

HOW MANY TO FIRE

Naturally, in a hot fight your gung-ho squad's hep on delivering as many mortar rounds as it can on the double.

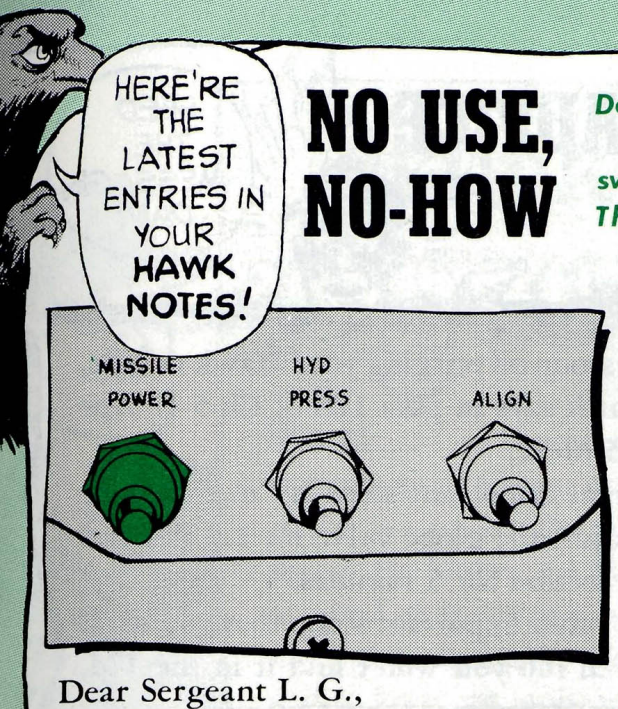
But, when you're tossing M362, M374 and M375 rounds from an M29 or M29E1 81-MM cannon, there's always the risk that too many rounds per minute too long could be as bad as too few RPM's.

Meaning—if you exceed firing rates, your cannon will get red-hot (go over 1,000 degrees, even) and chances are you and your squad and your weapon will get hurt worse than Charlie.

So, you squad leaders, when you start firing, stick to the RPM's in this chart. Like it says, it makes a big difference what cannon you're using, what ammo you're firing and how long you fire it . . . like for 1 minute, 1½ minutes, 2 minutes, or sustained.

MORTAR				
CARTRIDGE	M29		M29E1	
	Maximum	Sustained	Maximum	Sustained
M362	15 RPM For 2 min 27 RPM For 1 min	4 RPM 4 RPM	21 RPM For 2 min 30 RPM For 1 min	5 RPM 5 RPM
M374, M375	18 RPM For 2 min 30 RPM For 1 min	5 RPM 5 RPM	25 RPM For 2 min 30 RPM For 1½ min	8 RPM 8 RPM

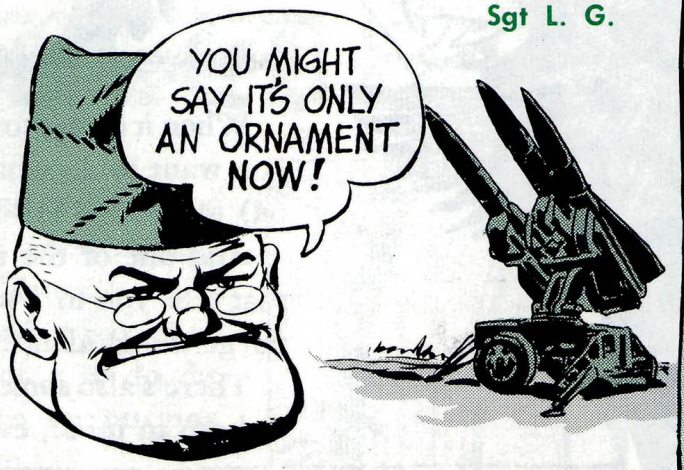
NO USE, NO-HOW



Dear Half-Mast,

What's the purpose of the missile power switch on the Hawk launcher control unit? There's nothing in writing on it.

Sgt L. G.



Dear Sergeant L. G.,

At one time, the switch was used in testing the old battery-powered block 1 missiles. And it was also used to pre-warm the missiles in cold weather in days gone by.

Now, it's nothing more'n an "ornament" seeing's how it's not used for anything. So just forget it's even on the LCU panel.

Half-Mast

IN FOR A SHOCK

OK . . . so maybe two heads are better than one. But two arms can't beat three—not when they're the ones on your Hawk launcher.

And two arms are what you can wind up with if those two shock absorbers for the "B" arm go on the bum. That means when they leak oil or maybe go completely dry.

If the launcher is run down to −72 mils with missiles aboard, and the shocks are in bad shape, the "B" arm can be snapped in two. It's a fact.

So keep an eye on the shocks the way it says in step 4, table 11, TM 9-1440-500-12/2 (Nov 63). If they show a leak, replace 'em.

GOOD ADVICE

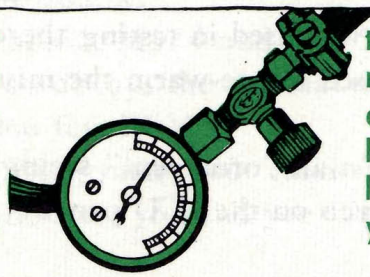
When it comes to scoop on purging your Hawk missile, you want to do what it says in para 128 of Ch 5 (7 Apr 64) to TM 9-1410-500-12.

And one of the real important steps is "m," the one that tells you to "Adjust the globe valve for 1.5 PSI and purge the guidance section for 5 minutes."

There's also some other important scoop that you want to keep in mind, even tho you won't find it in the TM.

First . . . if the needle doesn't kick over when you make a small adjustment of the globe valve, the gage needs checking.

Second . . . while purging for five minutes, keep an eye on



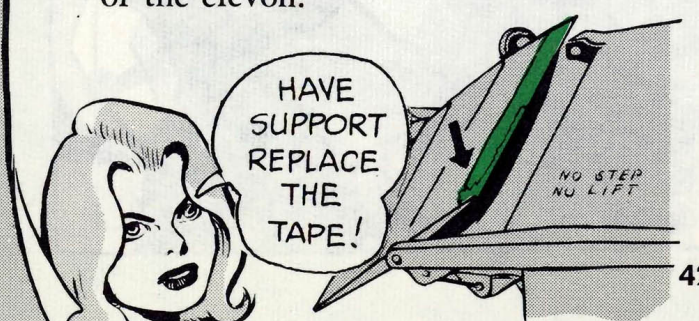
things. If you over-pressurize, the missile could explode like a stick of dynamite geboomin . . . and leave you with a bird that looks like a peeled banana. That is, if you're around to see it.

SUPPLY SYSTEM THANKS YOU

Wait one . . . and think about it.

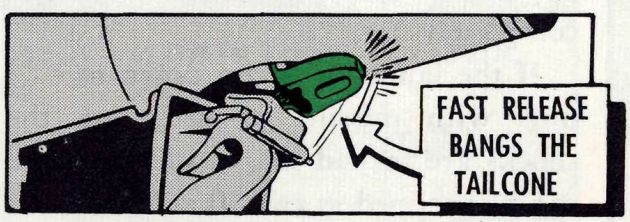
You're not playing the game according to Hoyle when you replace an elevon for your Hawk missile because the tape on the leading edge is battered.

What you want to do is have your support unit get rid of the beat-up tape in favor of new stuff that's listed under FSN 8030-720-7516 on page 56 of TM 9-4935-501-15P/1 (Jun 66). Tape that's in good shape keeps moisture out of the elevon.



Another thing about the missile . . . please to take it easy when you release the launcher umbilical cap after you've put the umbilical plug in the bird.

The cap is spring-loaded and packs a mean wallop when you let go of it fast-like — enough of a sock to dent the aluminum tailcone.



True . . . a dent in the tailcone won't hurt anything, but you might have a hard time trying to keep a guy from replacing it anyway.

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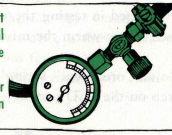

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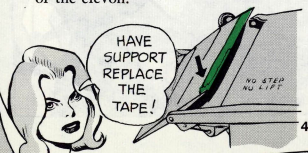

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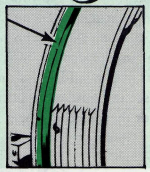
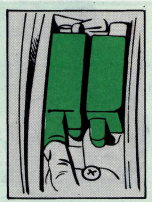
True . . . a dent in the tailcone won't hurt anything, but you might have a hard time trying to keep a guy from replacing it anyway.

Hawk Mechanic's CREED

First . . . each time he removes the radome cover he puts on a new radome gasket — unless the old one's in A1 shape. He knows the gasket has to be in good shape if it's going to do the kind of sealing you need for purging and to keep out moisture.

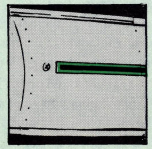


Second . . . he always takes the time to check the electrical plugs and connectors on the gimbal rings. If the plugs are cracked, have fouled up contacts or are loose, or if the connector pins are battered, he could run into the problem of not being able to hold pressure while purging. It's a fact . . . the nitrogen can leak past loose connections and through cracks.



Third . . . he keeps an eye peeled for a change in the color of the desiccant. He knows that when it goes from blue to pink, the invitation has gone out to moisture to make itself at home.

Fourth . . . he makes sure the side antenna covers are fastened good and tight to the missile body. He knows that if they're not, he's got another deal of not being able to hold purging pressure. And a loose cover lets moisture and dust into the waveguides.



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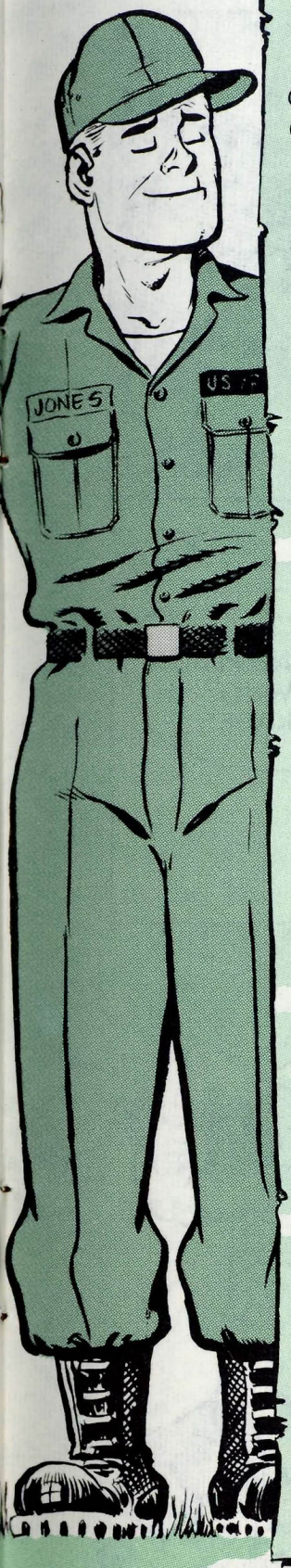

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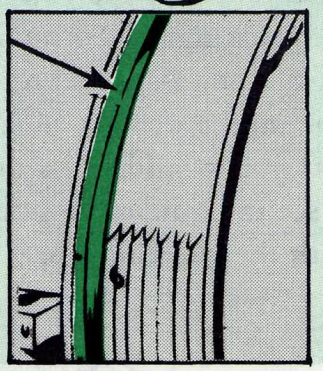

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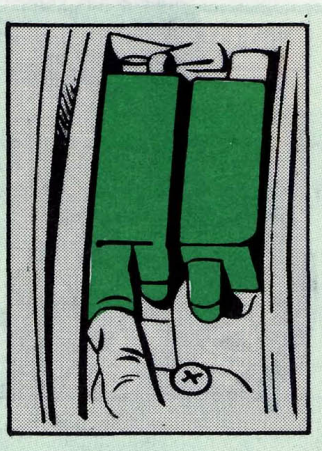

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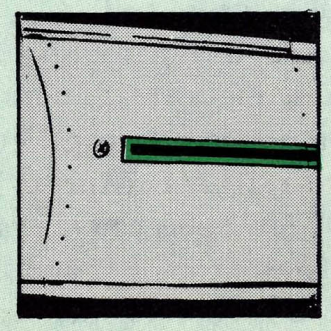
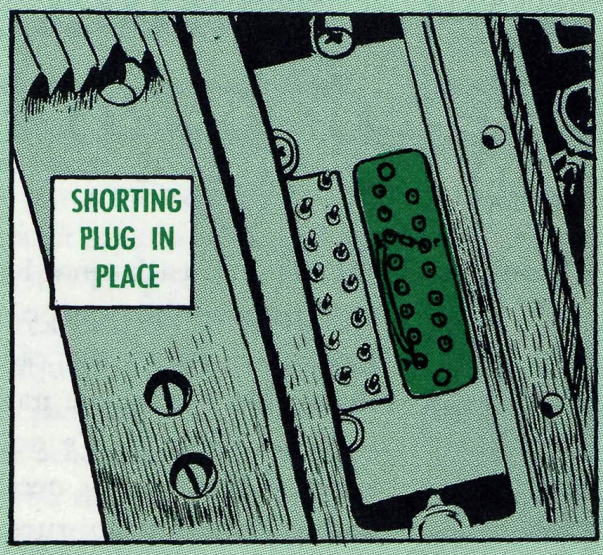
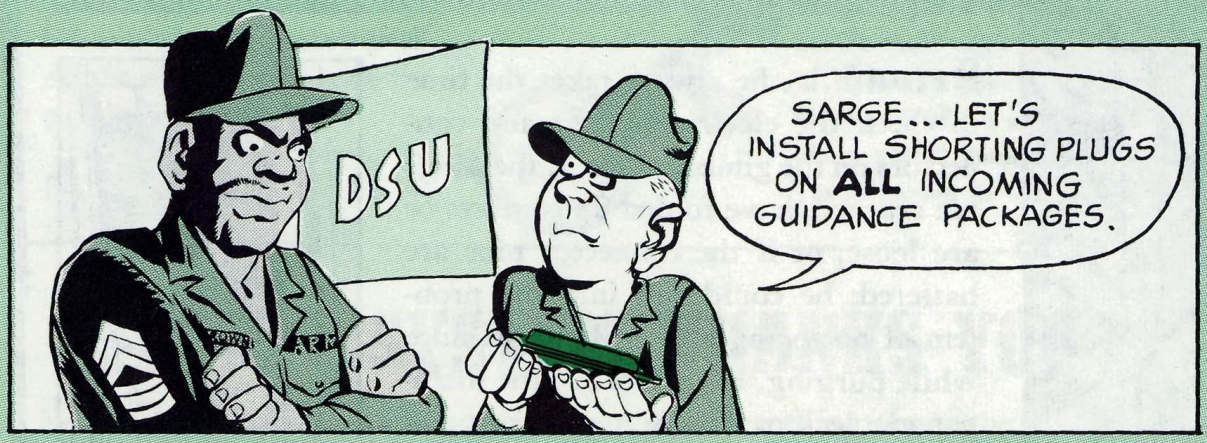


HAWK NOTES

PLUG ALONG

Those four connectors on the gimbal ring of your Hawk missile are in a good spot — to get clobbered whenever the guidance package is making a trip from your outfit to your support people and back again. So put shorting plugs on the connectors to protect 'em . . . and you might drop a hint to your DSU that you wouldn't be one bit annoyed to see the guidance package come back with the shorting plugs installed.



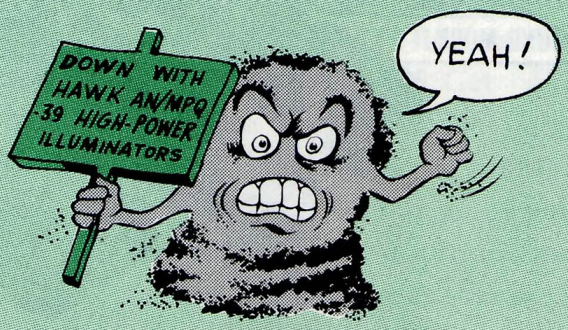


BY ANY OTHER NAME

Call 'em what you will . . . those plastic covers used on the actuator section in your Hawk missile go by the official handle of Cap-Plug, protective, dust and moisture seal.

And that name should ring a bell 'cause the covers — oops . . . cap-plugs you need are on page 3 of TM 9-1410-500-15P/2/1 (Apr 67). FSN 5340-291-3642 gets you the cap-plug for the exhaust fitting . . . and FSN 5340-880-1132 is good for the cap-plug used on the pressure cap.

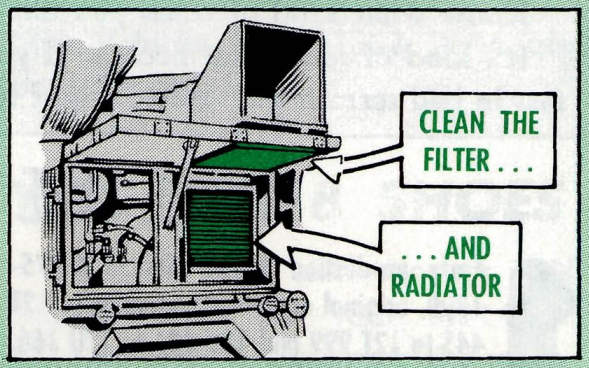
A LITTLE DUST WILL DO YOU-IN



What you don't know won't hurt you. That's what the man said.

But don't you believe it — not when it comes to the liquid cooler unit in your Hawk AN/MPQ-39 high-powered illuminator.

F'rinstance, the cooler unit fan sucks dust through the filter and the dust builds up in the radiator. You don't know it, but the dust is so heavy that the air has a hard time getting through the radiator. Result: the coolant heat is trapped. And that heat's rough on the HPI's electronic components.



So it pays to clean the radiator now and again — at least twice a year.

No sweat. Take the cooler unit out of the HPI . . . separate the radiator from it . . . and go to work on the radiator, using an air hose with at least 75 PSI to blow away the dust.

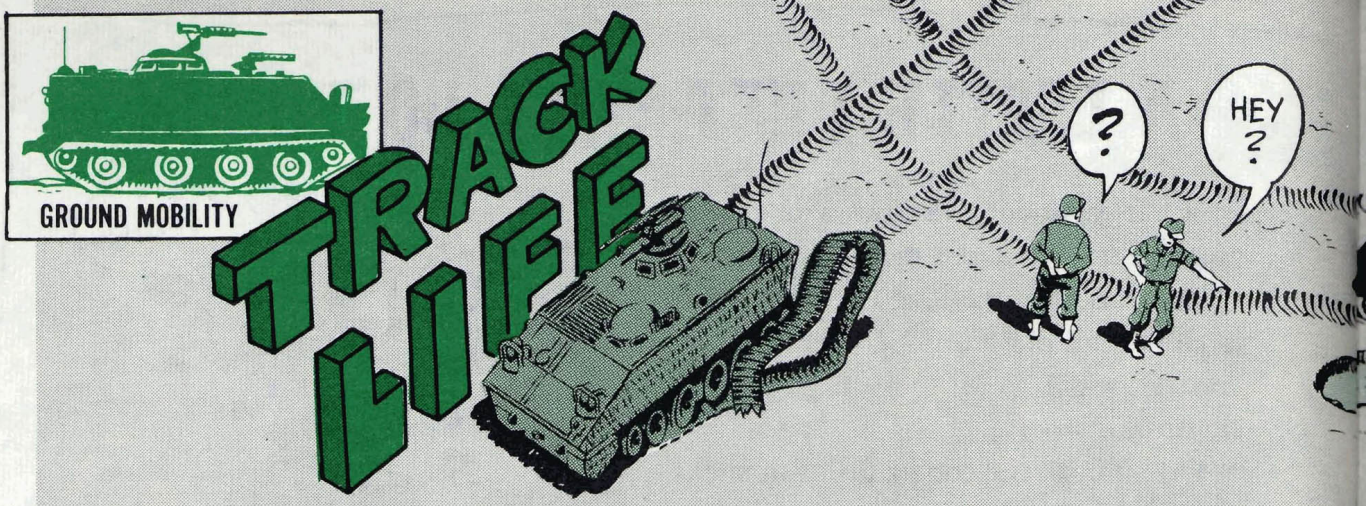
If the radiator is really dirty, you may have to use a soft brush and soapy water on it. In this case, follow through with clean water and a drying with the air hose.

And don't forget to hit the filter with the air hose.

TURN 'EM EASY

OK . . . so your transmitter test set B has a cavity tuning knob that you turn to find the transmitter frequency for your AN/MPQ-34 CW acq radar and AN/MPQ-39 high power illuminator. And your receiver test set has an attenuator knob for finding the receiver noise figure on the CW acq and HPI.

The knobs may be on different pieces of equipment, but they want to be treated the same way — with care. You want to turn them slow and easy. Giving them a sudden twist, or tuning them beyond their limit stops, can throw the test sets off calibration.



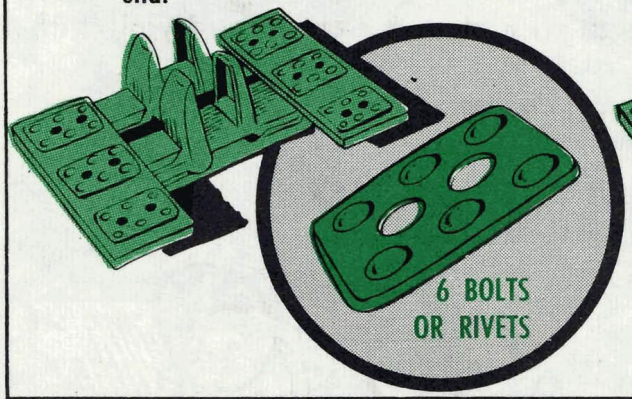
Know what kind of track you have on your M114/M114A1 Scout?

It's kind of important because if you break a track when you're going pretty fast in bad terrain the vehicle might turn over.

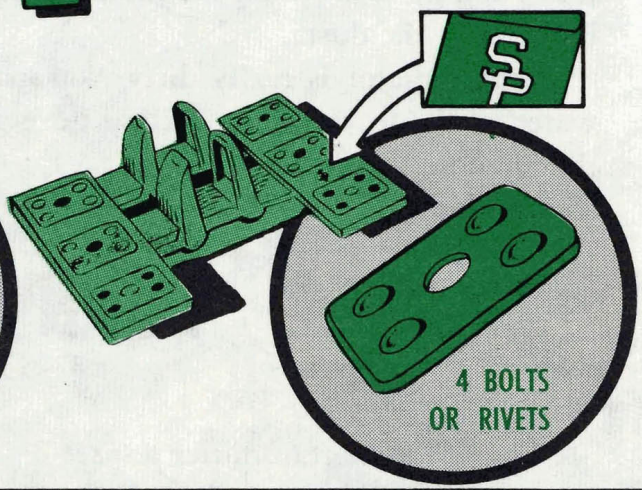
THERE ARE THREE KINDS OF TRACKS...

1 Early production track, FSN 2530-475-1300, original equipment on vehicles 12T 445 to 12T 999 and 12U 001 to 12U 166. Replace this track as soon as you get 1,000 miles on it.

You can tell this track because it is thin ($^{29}/_{64}$-in) and has 6 rivets (or bolts) on each end.



2 Late model track, FSN 2530-955-9448, is thicker, ($^{9}/_{16}$-in) and has 4 rivets (or bolts) on each end. If it has the vendor mark "SP" and the year mark 64 or 65 its safe life is 1,500 miles.



So-o-o-o, check out what kind of track you have and how much mileage you have on it and replace if needed.

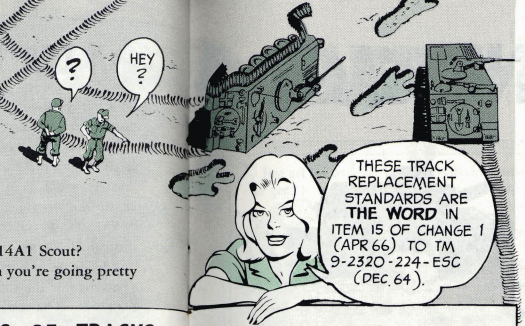
To give yourself the best possible deal on track safety, check your track tension often the way it shows on page 101 of your TM 9-2320-224-10. With the right track tension, your center guides are not likely to misguide, which is the biggest reason for early track failures.

Also, look over your tracks often, checking for loose rivets, not enough torque on connector shoe bolts, bent or broken guides or anything else wrong that could make your track break.

When a track fails, do not apply brakes or try to steer but release all controls and coast to a stop.

GROUND MOBILITY

TRACK LIFE



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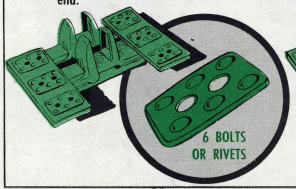

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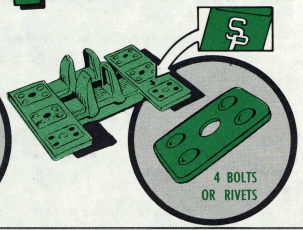

3 Late model track that looks just like No. 2 with the same FSN but with a different vendor mark. This track does not need replacement until you have 2,500 miles on it.

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If you do have a track failure report it on an EIR (DA Form 2407). Give all the details, including the FSN of the track, vehicle registration number, mileage, type of terrain and what effect the track breaking had on the vehicle.

'Course if you replace your track when you should and check it often, you'll prob'ly never have to do this.

DOOR STOP DOPE

Having problems with the inner door handle on your M114/M114A1 carrier beating up the seal retainer? Get your direct support to apply the door stop part of MWO 9-2320-224-30/6 (Mar 66) and Ch 1 (Jul 67). That gives you a door stop like the latest production models already have. Vehicles that need this have serial numbers 2792 or below. Vehicles 2801, 2802, 2803, also need the door stops.

YOU GET 8 SHOES

When you order track shoe set, FSN 2530-955-9448, for your M114 or M114A1 carrier, remember the set includes 8 track shoes. Some Joes who thought there was only one shoe in the set have been ordering 8 times as many track shoes as they needed. 'Nuff said?

A CLUE FOR YOU

Here's a clue on those last digits of the pubs for your M113 or M113A1 APC. When you see a /1 after the -10, -20, etc., you know that pub is for a gasoline engine (TB 9-2300-224-10/1, for example). A /2 tells you it's for a diesel (TM 9-2300-224-10/2/1). A /3 covers both gasoline and diesel (TM 9-2300-224-20P/3).

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TANK GAGE

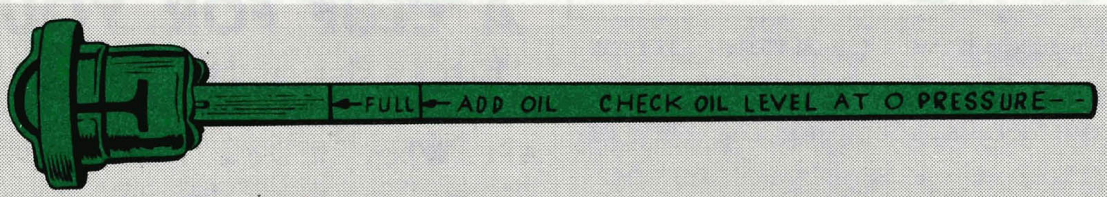
If you have an M60 or M60A1 tank, an M48A2, M48A2C or M48A3 tank, an M728 CEV, or an M60A1 bridge launcher vehicle, here's the latest dope on the gage you use to check your hydraulic oil reservoir.

There are 2 gages in the system and you might have either one.

1. If you have the earlier gage FSN 2520-565-3256, it will have the part number mark 8744538 on one side and on the other side the marks FULL AT 0 PRESSURE and FULL AFTER PUMPING.

Just pretend the FULL AFTER PUMPING mark is not there. You no longer make this check with the system at operating pressure but only when the accumulator gage is at 0 (zero) pressure.

This gage is going out of the system, being gradually replaced by . . .



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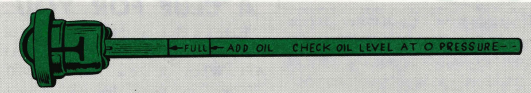

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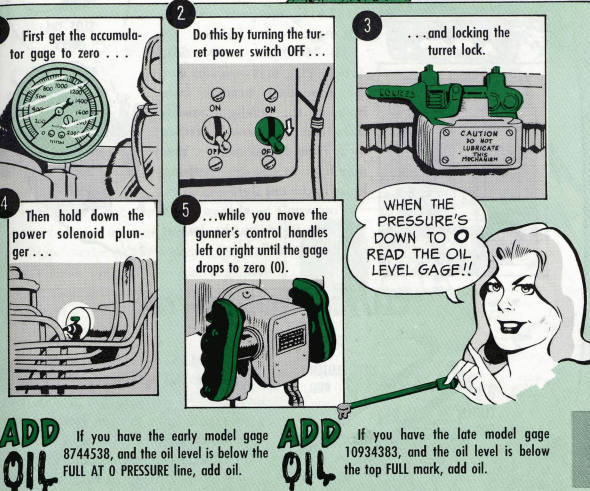

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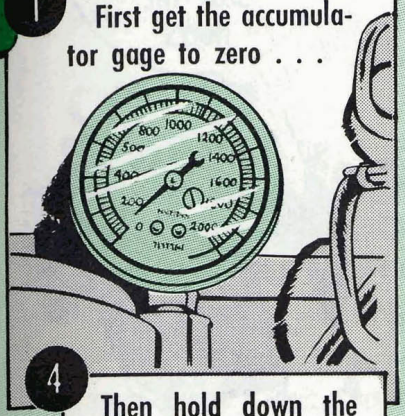
Refill only with OHT oil, the way it tells you in Note 5 of most of the LO's dealing with these vehicles.

BRIDGE LAUNCHER, TOO

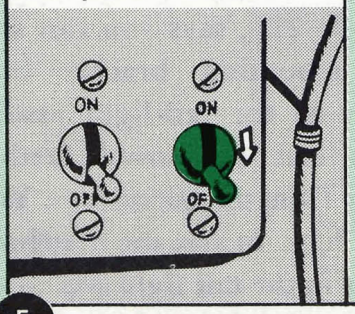
Wondering whether MWO 9-2300-265-20/1 (Aug 65) should be applied to M48A2 tank chassis' that have been modified as bridge launchers? Worry no more. The MWO should be applied even though bridge launchers are not listed in para 5 of the MWO.

GUIDE

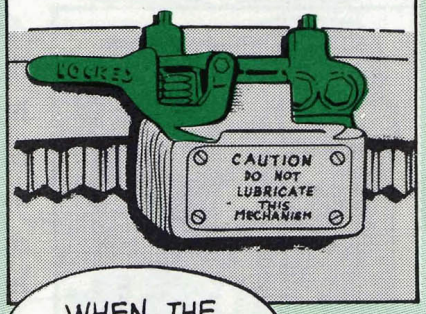
1 First get the accumulator gage to zero . . .



2 Do this by turning the turret power switch OFF . . .

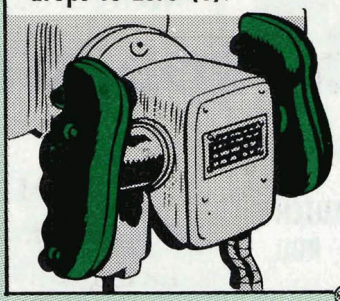


3 . . . and locking the turret lock.



4 Then hold down the power solenoid plunger . . .

5 . . . while you move the gunner's control handles left or right until the gage drops to zero (0).



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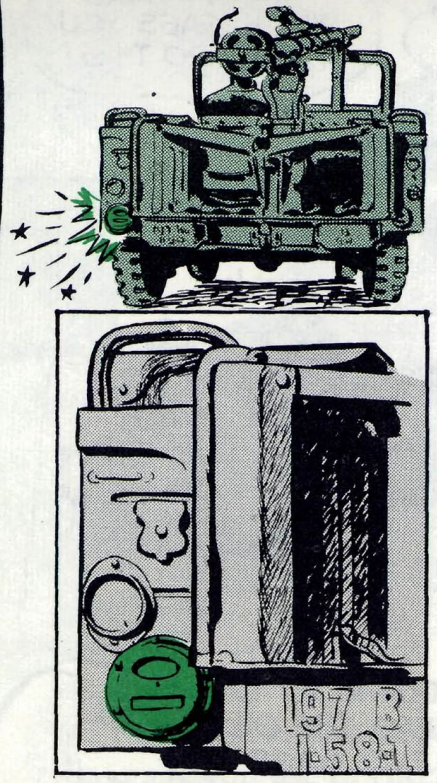
M151A1C WEAPONS CARRIER... MOVE TAIL LIGHTS

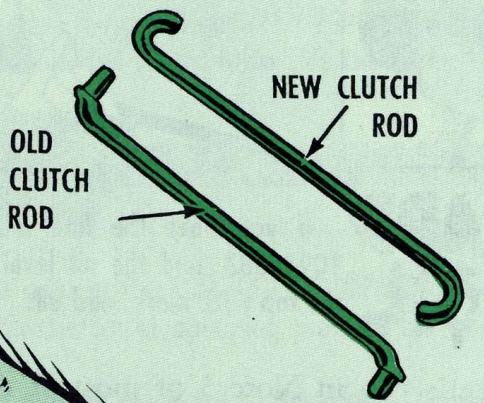


If the M79 tripod legs are banging the tail lights on your M151A1C weapons carrier, just move the tail lights.

TB 750-933-1/4 (Oct 66), Article 210, says you can slot the mounting bracket bolt holes so the tail-light assemblies can be moved farther away from the tripod legs. You may have to slot the matching holes in the tail light well, too.

You won't be able to move the tail light much, but it should be enuff.

CLUTCH ROD BETTER



New M151A1's have a tougher clutch-link rod than was put in earlier model G838-series ¼-ton trucks. But your support can get this new rod for your M151 or other G838-series vehicle.

It's Rod, link, clutch, FSN 2520-907-0660. It's not likely to bend or break like the old job. And it doesn't need any cotter pins to hold it in because it's hooked at each end.

So look at your clutch-link rod and see if it needs replacing.

M151A1C WEAPONS CARRIER ...

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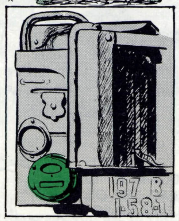

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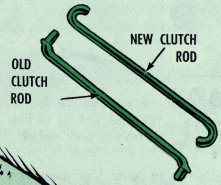

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M151 FLOOR DRAIN ...

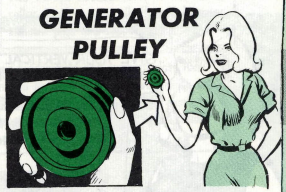
COVER NOT NEEDED

Sleep relaxed. Don't toss 'n' turn just because you're missing a floor drain-cover in your M151 ¼-ton truck. It's a non-supply item, so if you can't find a replacement in your can yard, forget it. New model M151's and M151A1's don't have 'em either—just a groove in the floor with a hole at the end.

INGENUITY COUNTS

Even tears won't get you a new thumbscrew for the top bows on your M151 ¼-ton truck. It's a non-supply item. If your boneyard can't help you get a replacement, you'll have to make one out of a standard bolt, ⅜-NC, 1-in long with ¼-in shoulder.

GENERATOR PULLEY



This 2-belt pulley has been a non-supply item, but now it's available to TM 9-2320-218-20P users. It's FSN 2920-678-1847. It'll be showin' up in Ch 5 to the -20P and is listed now, at $2.80, in Fed Cat C2920-ML-A (Aug 67).

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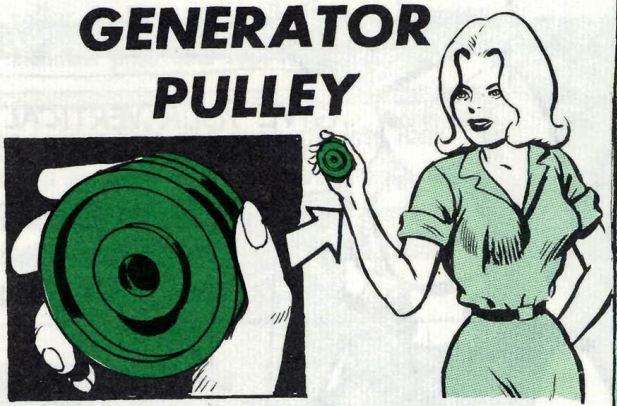

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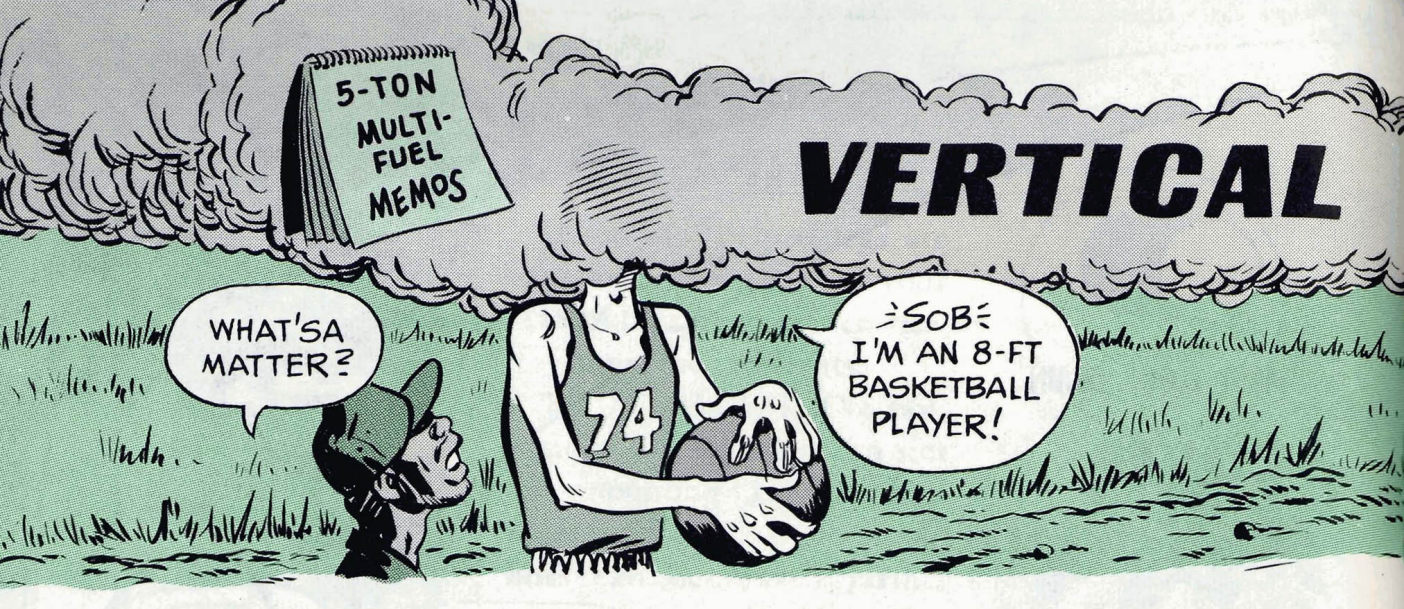
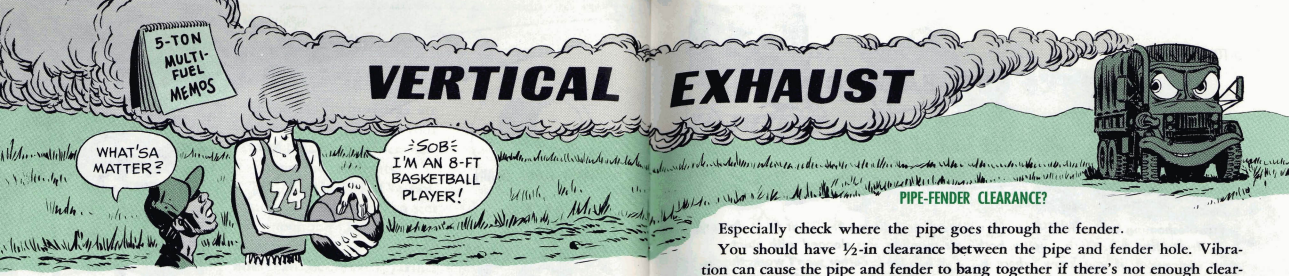


How about that exhaust stack on your G744-series 5-ton multifuel engine truck! It gets exhaust smoke and fumes up where they won't bother anybody but 8-ft basketball players.

Whether your truck's got the LDS 465-1 or LDS 465-1A engine, it should have the new vertical exhaust. New trucks get the stack in production. For trucks that came equipped with the LDS 465-1 engine, MWO 9-2320-211-20/10 (Mar 67) puts the stack on.

REPLACEMENT PARTS?

Right now repair parts for the vertical stack exhaust system are in Ch 2 (Apr 67) to TM 9-2320-211-20P.



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PIPE-FENDER CLEARANCE?

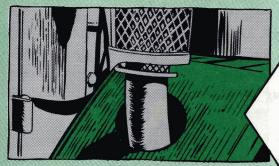
Especially check where the pipe goes through the fender.

You should have ½-in clearance between the pipe and fender hole. Vibration can cause the pipe and fender to bang together if there's not enough clearance. The shock can cause cracking of the lip flange and exhaust manifold and even damage the turbocharger.

TB 750-981-1 (Jan 67), Article 133, tells about this problem and what to do about it:

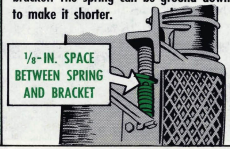
Make sure there's no collar in the fender opening. The collar is part of the MWO kit but it's supposed to be discarded. Or it may have been installed by mistake in production. Get rid of it.

Two fix-ups needed here: 1. Get rid of collar. 2. More space (half inch) between exhaust pipe and support plate.



Your fender hole and support plate may have to be ground out to give the ½-in clearance you need. If you don't have a support plate, that's OK — it was left out in production on purpose.

When your truck's not running, there should be ⅛-in clearance between the lower compression spring and mounting bracket. The spring can be ground down to make it shorter.



EXHAUST

PIPE-FENDER CLEARANCE?

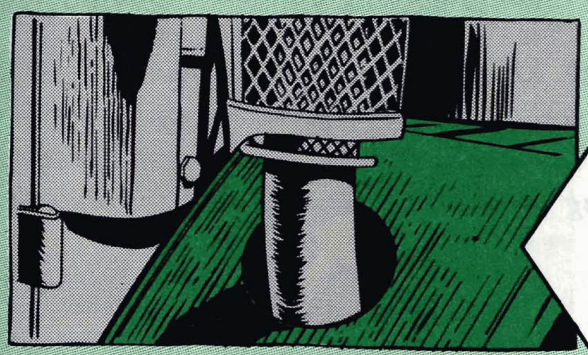
Especially check where the pipe goes through the fender.

You should have ½-in clearance between the pipe and fender hole. Vibration can cause the pipe and fender to bang together if there's not enough clearance. The shock can cause cracking of the lip flange and exhaust manifold and even damage the turbocharger.

TB 750-981-1 (Jan 67), Article 133, tells about this problem and what to do about it:

Make sure there's **no** collar in the fender opening. The collar is part of the MWO kit but it's supposed to be discarded. Or it may have been installed by mistake in production. Get rid of it.

Two fix-ups needed here: 1. Get rid of collar. 2. More space (half inch) between exhaust pipe and support plate.



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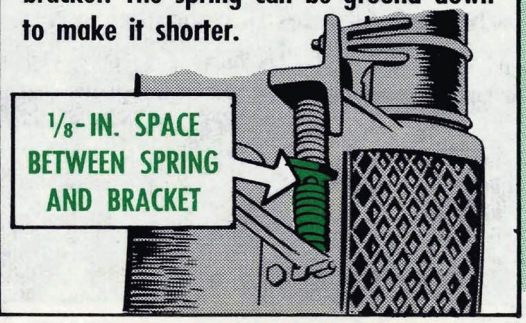
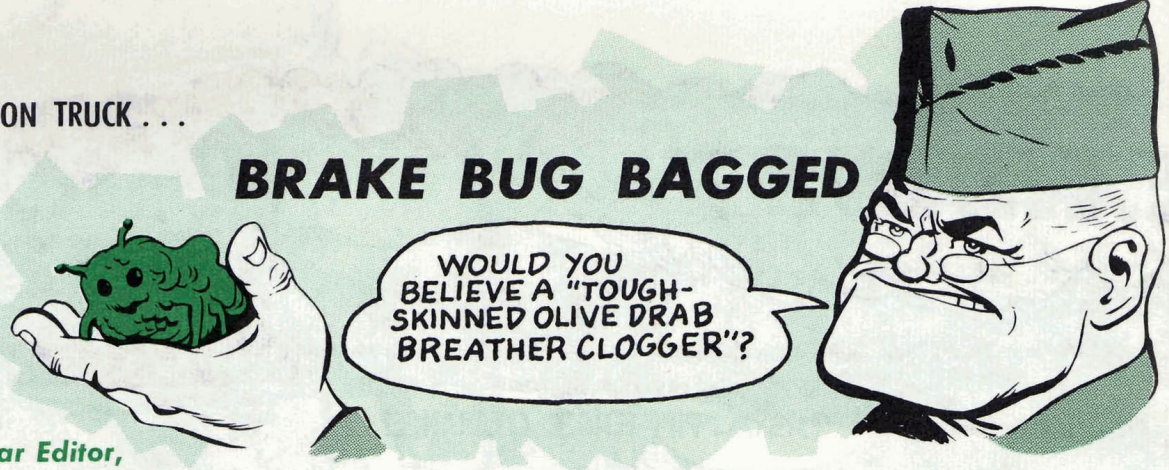


5-TON TRUCK . . .

BRAKE BUG BAGGED



Dear Editor,

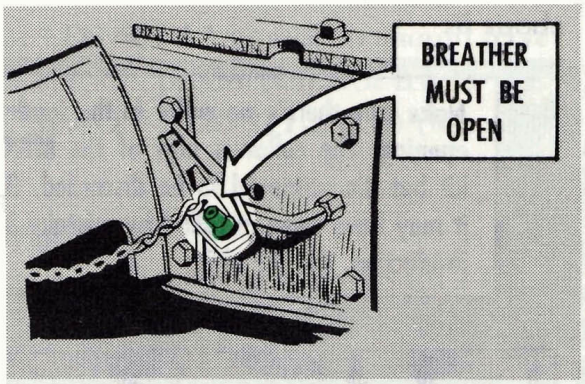
Troubleshooting brake trouble can be a long, frustrating job. Or it can be both short and sweet, if you know where to look. Here's a "lesson learned" that may save somebody a lot of trouble.

We received several G744-series 5-ton trucks (these happened to be M51 dump trucks) from a re-build shop. In road-testing these vehicles, we had trouble rightaway with the braking systems on 4 of them. The brakes just seemed to freeze or lock after the truck was driven a short distance.

After long inspection, the motor sergeant and I finally found the cause — the breather valve on the right front dummy air coupling was clogged with paint.

When the breather won't work, the piston in the hydraulic cylinder can't release itself after the brakes are applied.

CW2 Edward C. Zins
USAR, Warren, Ohio



(Ed Note — A word to the wise is enough. This "probable cause" should be jotted down on page 42 in TM 9-2320-211-20, under item 71, Troubleshooting-Service Brakes. Dirt, rust 'n' stuff can stop up this breather too, so it's a good idea to take off the right front dummy coupling once in a while and blow through the vent hole to make sure it's open.)

SPECIAL TURN FLASHER

Need a flasher for your commercial-design turn signal? If your flasher is Tung-Sol G104 — a pretty common one — FSN 5945-066-3984 will get you a replacement. It's listed in Fed Cat C5945-IL-A (Sep 67). This flasher would be for a turn signal setup locally purchased and installed on military-design transportation vehicles under SB 9-203 (Mar 62). It's not for military-type turn signals put on tactical wheeled vehicles in production or under MWO 9-2300-263-20 (Aug 63).

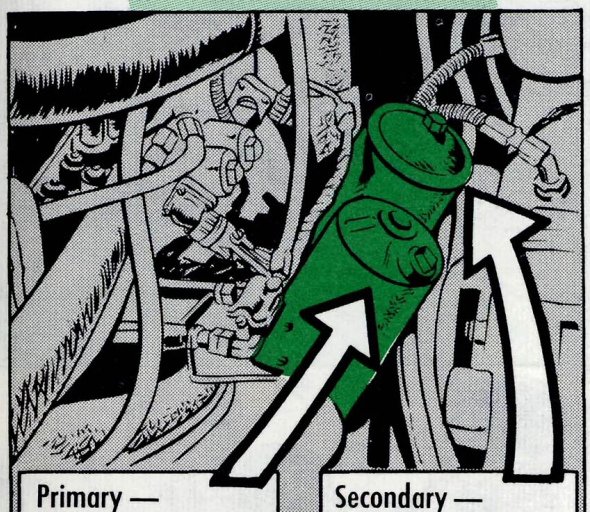
5-TON DIESEL TRUCK . . .

OIL & FUEL FILTERS

No coin-flipping when you're pickin' out oil and fuel filter elements for your G744-series 5-ton diesel truck (Mack ENDT-673 engine).

You can get confused by some of the FSN's floatin' around. They'll be straightened out in the parts manuals, but until they are, here're the elements for the 2 oil filters and 2 fuel filters:

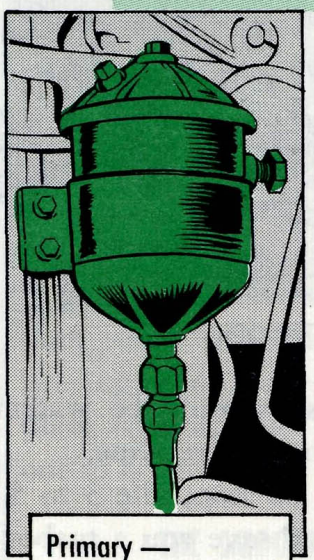
OIL FILTER ELEMENTS



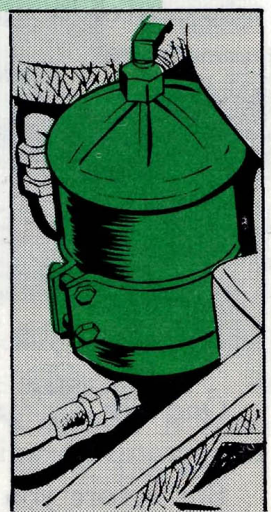
Primary —
FSN 2940-580-6283

Secondary —
FSN 2940-141-9026

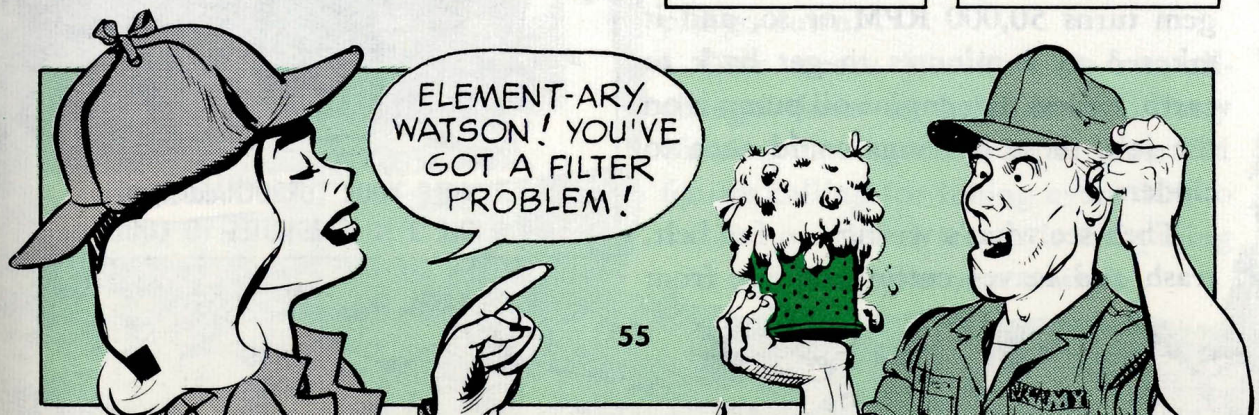
FUEL FILTER ELEMENTS



Primary —
FSN 2910-974-7445



Secondary —
FSN 2940-067-7625



STOP TAKE 10...

That D7E of yours is tough and rugged, but it needs a time out every couple or 3 hours when you're in rock, heavy dust, or muddy muck. Some little things need to be done 4 or 5 times a day — and keeping your rig healthy means you've just got to stop and take care of 'em.

LOOK

LISTEN

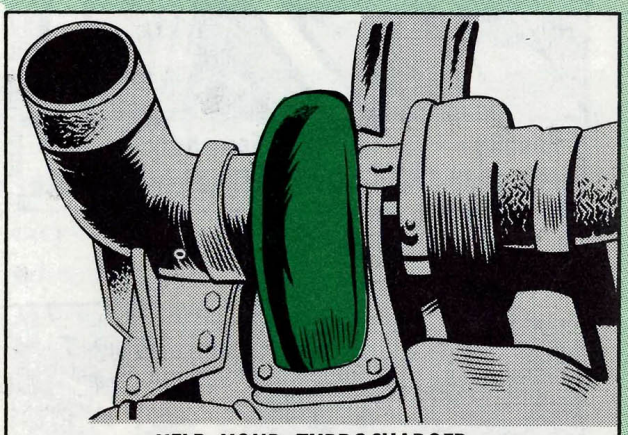
IT'S PRETTY SMART OPERATING TO TAKE A BREAK NOW AND THEN TO KEEP YOUR D7E HEALTHY!

THE TIP-OFF

One big STOP sign could be water temperature heading for red-line.

But before you do stop, idle 3 to 5 minutes. That could save you a turbocharger bearing burnout. That little gem turns 50,000 RPM or so, and it takes 3 to 5 minutes to get back to earth. Unless that engine oil pump is on the job, those bearings could turn to cinders.

Then see what's wrong . . . fan belt, trash and leaves cutting off air from



HELP YOUR TURBOCHARGER — IDLE 3 TO 5 MINUTES TO COOL.

STOP TAKE 10... AND SEE ON YOUR D7E

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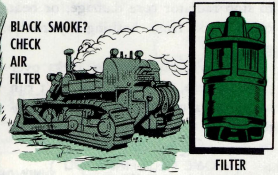
Then see what's wrong . . . fan belt, trash and leaves cutting off air from the radiator, low water level — most often it'll be simple. In brush or heavy dirt, use the service truck air hose to blow out the radiator core from behind. A nickel's worth of air could save a $4,000 engine.

One thing you can bet is, if you don't take that time-out, you're inviting deadline downtime. Cylinder head cracks, valve burnups, gasket failures . . . all kinds of major breakdowns can and will happen.

Black smoke is another bad sign. Usually that's air-filter choke-up — so stop, idle down, and clean that filter.



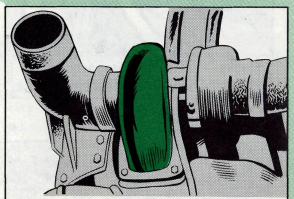
An oil pressure drop could mean any of several things.

You could have a broken oil line, a bum pump, line block, gage trouble, a bearing gone, low oil supply . . . or plain overheating. Whatever it turns out to be, stop, idle down, and see.

THE SMOOTHING SYRUP

Good lubing makes the hard work pill go down.

That means you have to cut oil-change times in half in dry, dusty weather. You have to whittle down TM figures calling for lubing every 100 to 1,000 hours, and see to it everything gets a shot at least once a week.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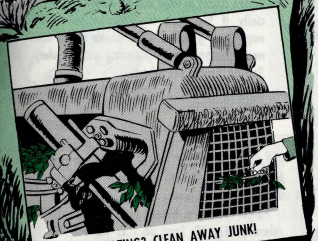
OVERHEATING? CLEAN AWAY JUNK!

AND SEE ON YOUR DIE

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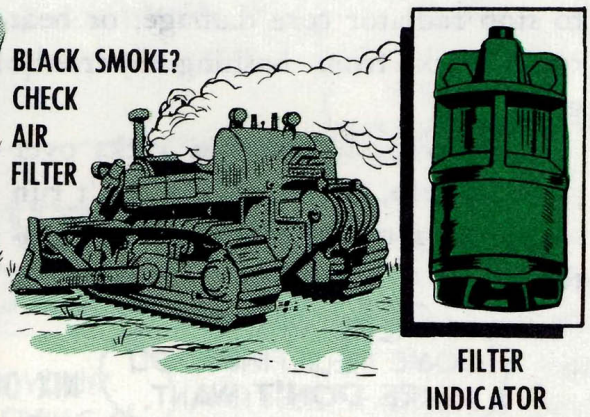

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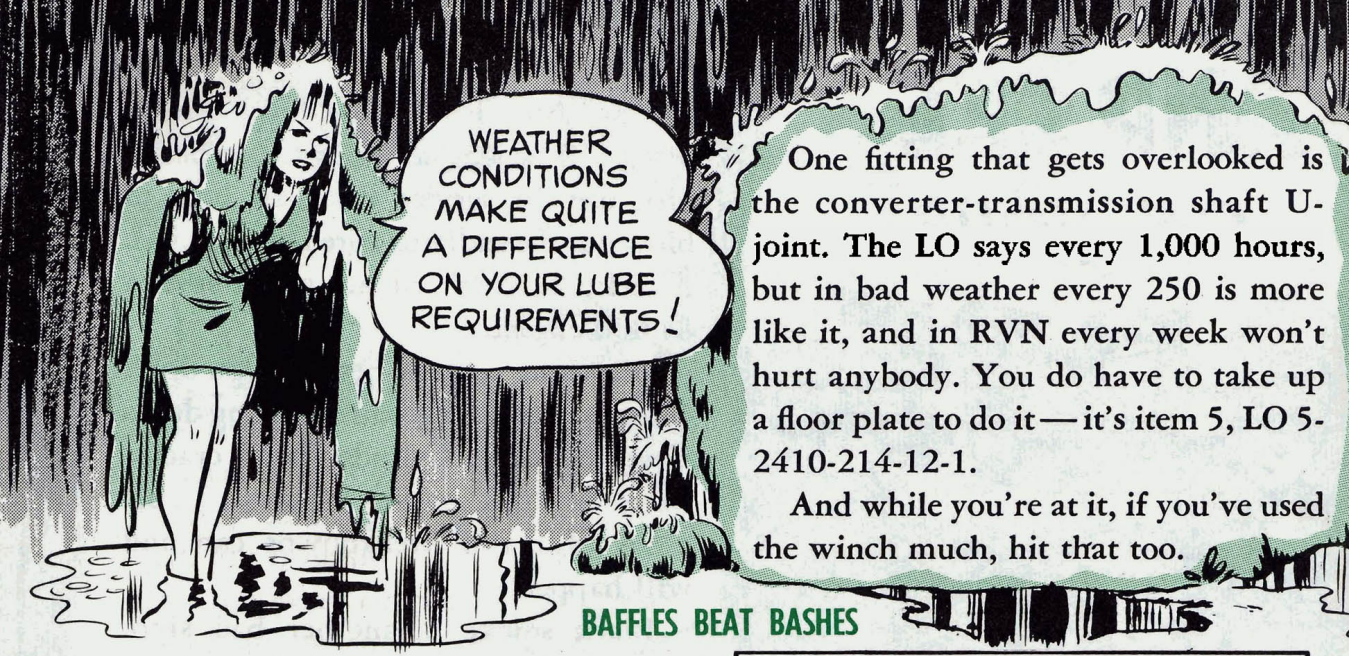
PS MORE



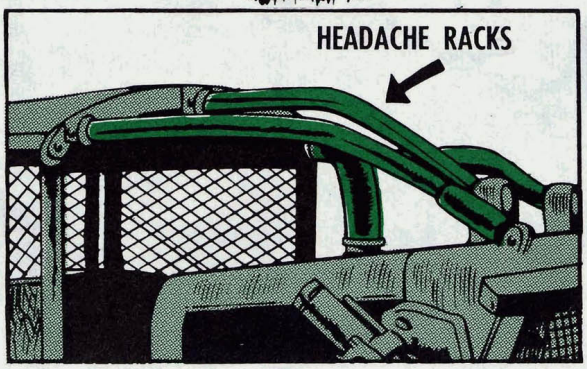
One fitting that gets overlooked is the converter-transmission shaft U-joint. The LO says every 1,000 hours, but in bad weather every 250 is more like it, and in RVN every week won't hurt anybody. You do have to take up a floor plate to do it — it's item 5, LO 5-2410-214-12-1.

And while you're at it, if you've used the winch much, hit that too.

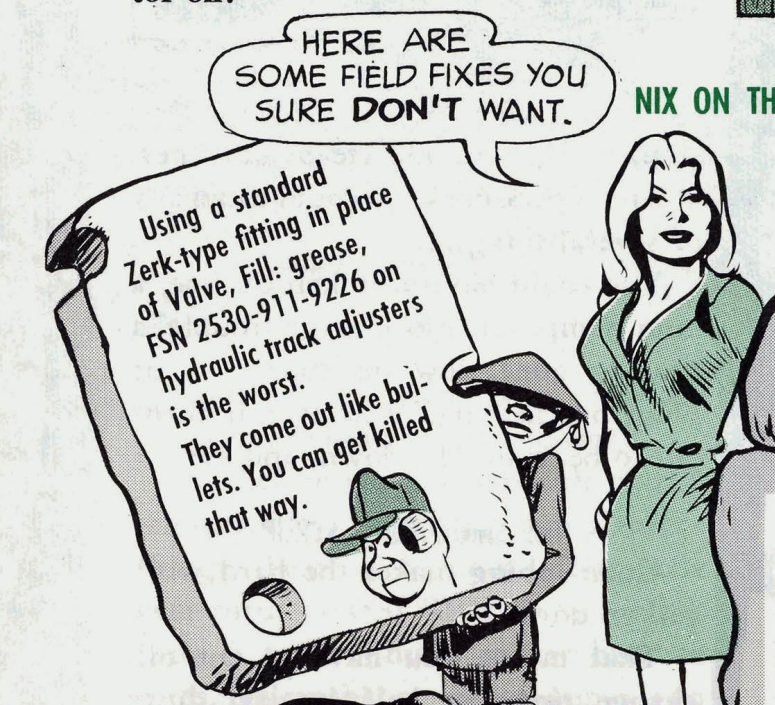
BAFFLES BEAT BASHES

Nothing says you can't put on guards to stop radiator core damage, or beat rocks back from bashing hydraulic gear.

Extra-strength headache racks over yourself help, too — tractors don't run so good if a tree trunk bats the operator off.



NIX ON THESE



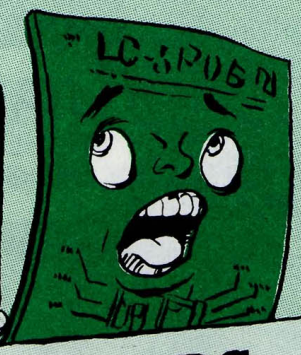
Welding braces on tanks to cut down flange cracks in lines can be disastrous, especially if the tank is "cleaned out" with naphtha or gasoline. A VC mortar round does nearly as good a job cleaning out the shop. Bolt-on braces are smarter.

Messing with track rollers and fixing idlers so the guide guards won't rub is no-go, too. Rollers are "lifetime" lubed; it's a depot job. And guide guards are put there to rub — they're meant to wear.

Forget boring a bigger hole in your decelerator (Fig 78, Para 36 f 2, TM 5-2410-214-35). Just keep the engine hungry with the Governor Control Lever.

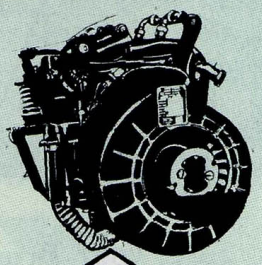
30KW HOL-GAR LO

There's a sour note in the generator song — LO 5-6115-321-12 should say use MIL-H-5606 in the hydraulic governor, not OE 10. A new lube order for the set, model CE301AC-WKI, will clear things up.



A LITTLE SQUEEZE HELPS

You can keep the air-cleaner duct from shaking loose on your 3HP Mil Std engine real easy. That is, you can if you've got a 2A016-III, FSN 2805-072-4871. What you want is Clamp, loop (padded), FSN 5340-958-8457, Mfr Code 96906, Part No. MS-21333-78. Put it at the bottom of the duct between the cleaner and oil pan. Loosen the No. 10-24 Cap Screw located near bottom of flywheel cover assembly. Secure the clamp with the screw, and forget you ever had trouble.



CLAMP, FSN 5340-958-8457 GOES HERE

TOO MANY VOLTS...

GIVE SLAVE -START JOLTS

Lots of generators got only 12-volt systems, and governors wired for no more'n 12 volts . . . so those governors will turn to cinders if they're overloaded.

You'll pull loose from your slave power first . . .

Flash your field next . . .

...And turn on the electric governor last —'specially if you're working with a 30KW Hol-Gar WKI.

NOT FOR M577A1 PLL

Cancel any requests you've got for Generator Set, FSN 6115-857-1397, listed in Ch 3 (Jul 66) to TM 9-2300-223-20P. This 4.2 KW generator for the M577A1 command carrier will be yanked out of the PLL iisting. It was just a slip, so forget it. The item was intended for TM 9-2300-223-34P.

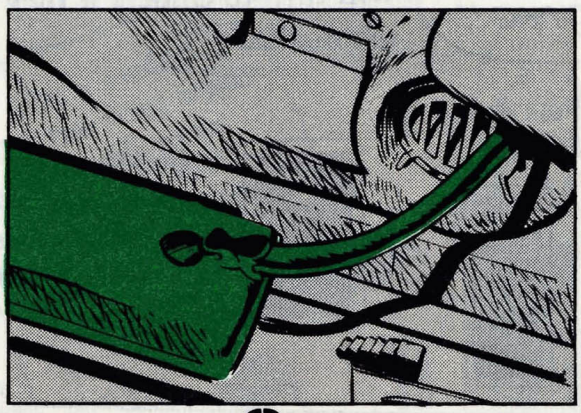
Sure, your Bruning 300 MS Map Reproduction Set will make overlays in color—but the overlay on your face will be red if you let the fiber primary gear in the Gear Head Assembly get chewed up.

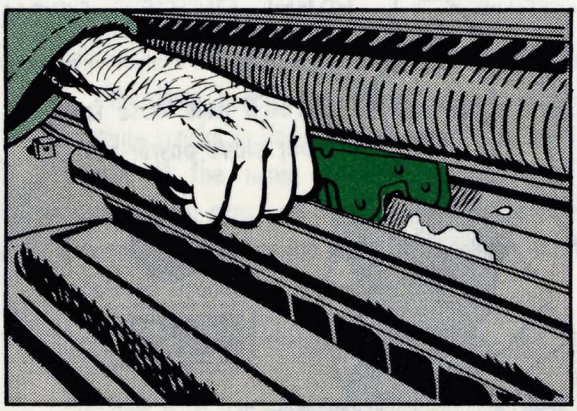
The cure's easy—clean's the magic word. But it's where and how you clean that counts.

Every time you run a job (not just daily or weekly) get the developer off the rolls. It's a short walk of only three steps.

1 First, drain solution if it's fairly fresh into the plastic bottle and cap it, squeegeeing the trays.

2 Next, squirt clean water over the rolls and wipe dry, squeegeeing again.





3 Then lower the rolls into place and replace the dust-cover on the machine.

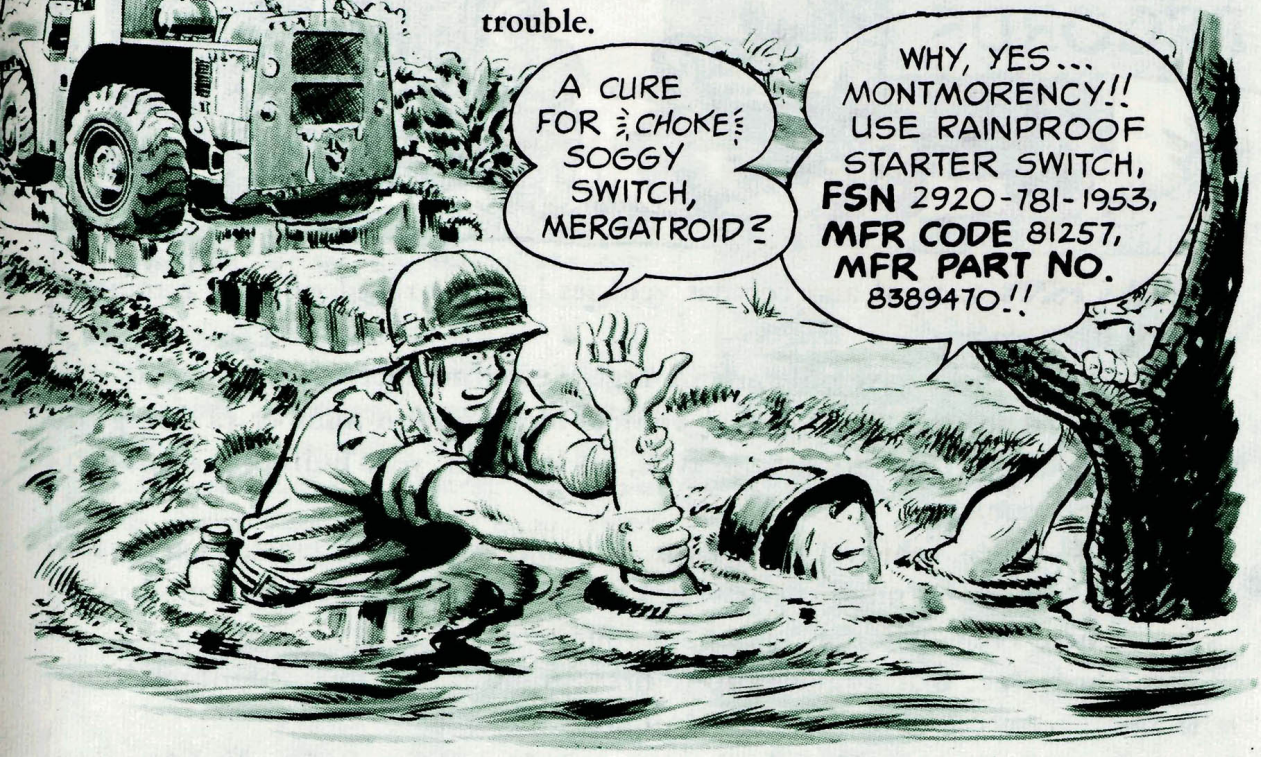
Now, how does that prevent fiber primary gear wreckage?

Simple. Leave developer stand in trays, and it makes crystals like sand or sugar. The crystals stick in the fiber gear and abrasion cuts the teeth off. Then when you flip the run switch, nothin' happens. Disaster.

You can use a battery-water bulb from motor pool to run clean water over the rolls . . . just enough to rinse. Then a clean rag wipe-off—that's all.

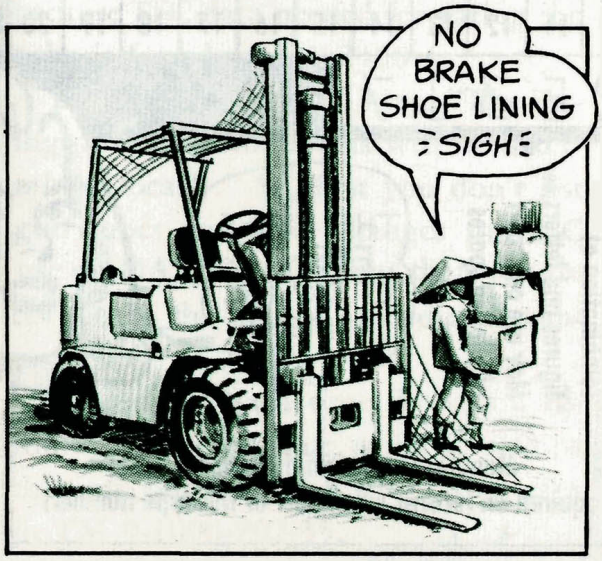
A SWITCHABLE SWITCH

Your 6,000-lb Anthony MHE 200 rough terrain forklift may have starter switch failure because of rain getting into the switch. There's a cure for that trouble.



That same switch can also be used on the 10,000-lb Pettibone-Mulliken Model RTL-10, and the 6,000-lb Chrysler rough terrain forklifts.

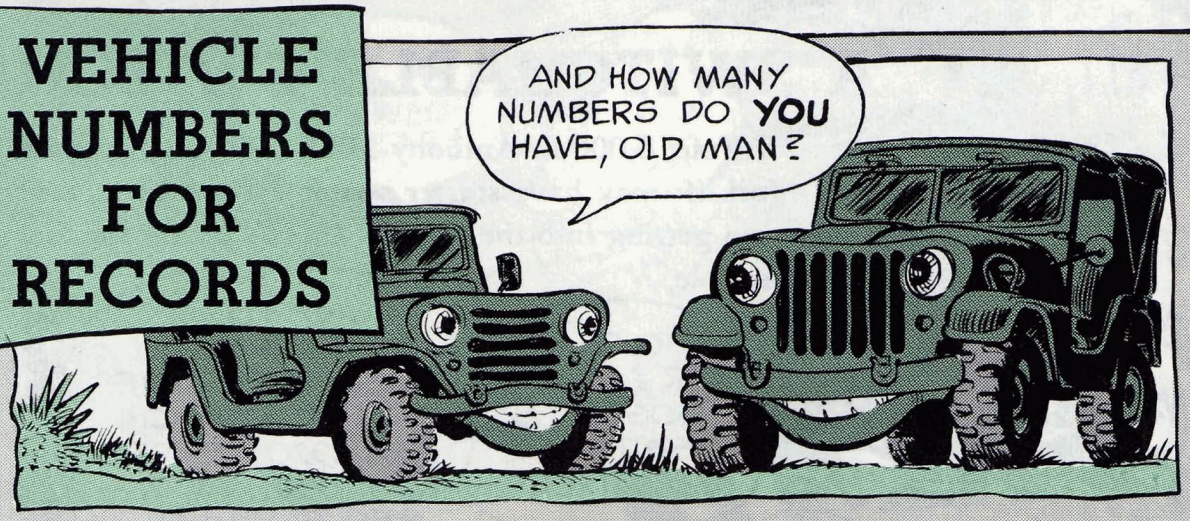
BAKER FORKLIFT



Does your 6,000 lb Baker forklift MHE 193 need brake shoes and lining for the hand brake? Ask for one each Brake Shoe and Lining Assembly, outer, FSN 2530-359-0860, and Brake Shoe and Lining Assembly, inner, FSN 2530-572-4307.

No need to deadline your 193 because you can't find an FSN for a fuseholder. FSN 5920-892-9395, M/C 81349, Part No. FHN31G, will get you one.

VEHICLE NUMBERS FOR RECORDS



Besides FSN's, tactical and combat vehicles have 1 to 3 identifying numbers on their data plates.

Some M151 trucks have only a USA registration number.

Soon new vehicles will get only 1 **vehicle** identification number (a string of figures and letters that tell vehicle type, registration, year built and manufacturer's serial number).

But most older vehicles have 2 or 3 numbers—USA registration (with matching Army serial number for some) and a manufacturer's serial number.

So . . . here's how you line 'em up on your records:

1 number—use that number (up to first 8 figures or letters, counting from left) any place a registration or serial number is needed.

2 or 3 numbers—use USA registration number where that's called for, use **manufacturer's** serial number where a serial number's called for, use either if the DA form or TM 38-750 does not specify which one is to be used.

The **new** vehicle identification numbers just adopted **may** have as many as 20 figures and/or letters, and will be made up as follows:

Spaces	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
ID No.	0	1	B	6	0	3	6	7	0	2	E	3	1	7						

Veh. Type — Figures Only

1 or More Letters with Figures in Sequence (4 Spaces)

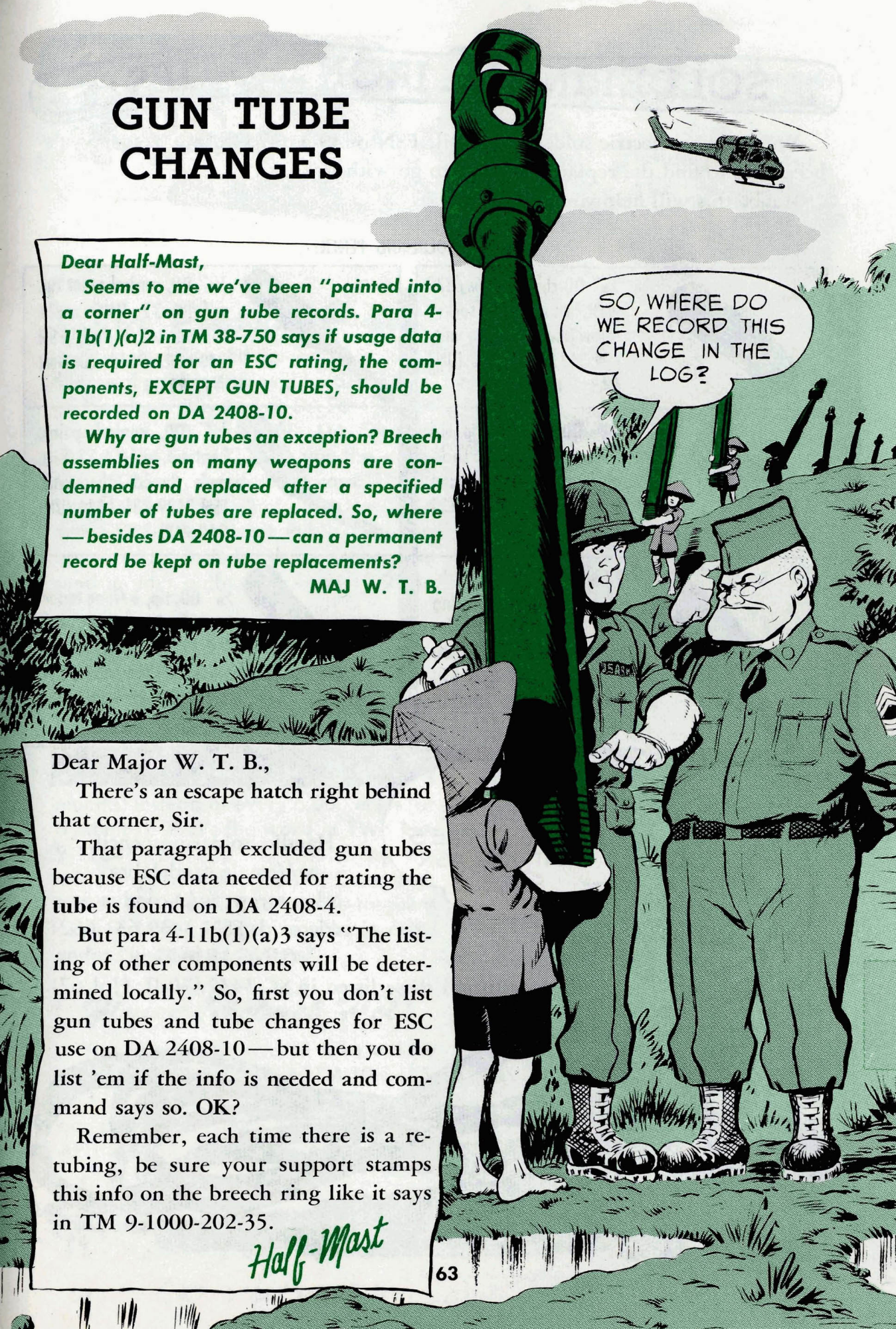
Yr of Mfr. — Figures Only

Registration Number
(Use this part only on records)

May be any combination of figures and letters — May use only part of allotted spaces

Manufacturer's Serial Number
(Not required on records when part of this type number)

GUN TUBE CHANGES



Dear Half-Mast,

Seems to me we've been "painted into a corner" on gun tube records. Para 4-11b(1)(a)2 in TM 38-750 says if usage data is required for an ESC rating, the components, EXCEPT GUN TUBES, should be recorded on DA 2408-10.

Why are gun tubes an exception? Breech assemblies on many weapons are condemned and replaced after a specified number of tubes are replaced. So, where — besides DA 2408-10 — can a permanent record be kept on tube replacements?

MAJ W. T. B.

Dear Major W. T. B.,

There's an escape hatch right behind that corner, Sir.

That paragraph excluded gun tubes because ESC data needed for rating the **tube** is found on DA 2408-4.

But para 4-11b(1)(a)3 says "The listing of other components will be determined locally." So, first you don't list gun tubes and tube changes for ESC use on DA 2408-10 — but then you **do** list 'em if the info is needed and command says so. OK?

Remember, each time there is a retubing, be sure your support stamps this info on the breech ring like it says in TM 9-1000-202-35.

Half-Mast

SOLDERING IRON TIPS

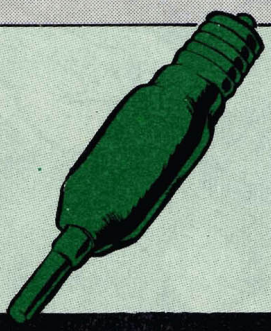
You have an electric soldering pencil, FSN 3439-346-7538, but you haven't been able to find the replacement tips to go with it.

Maybe this will help you.

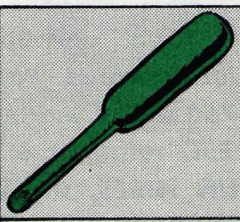
TIP, ELECTRIC SOLDERING PENCIL:

3/8" OD chisel tips w/37-watt, candelabra socket screw (male) heating unit, FSN 3439-034-7853 (UNGAR #1239)

5/16" OD pyramid tip w/ 23-watt, candelabra socket screw (male) heating unit, FSN 3439-034-7850 (UNGAR #536)

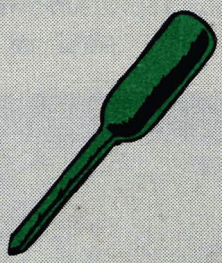


23-watt, candelabra socket screw (male) heating unit w/#6-32 UNC female thread for 1/8" OD male threaded tips, FSN 3439-337-6466 (UNGAR #535)

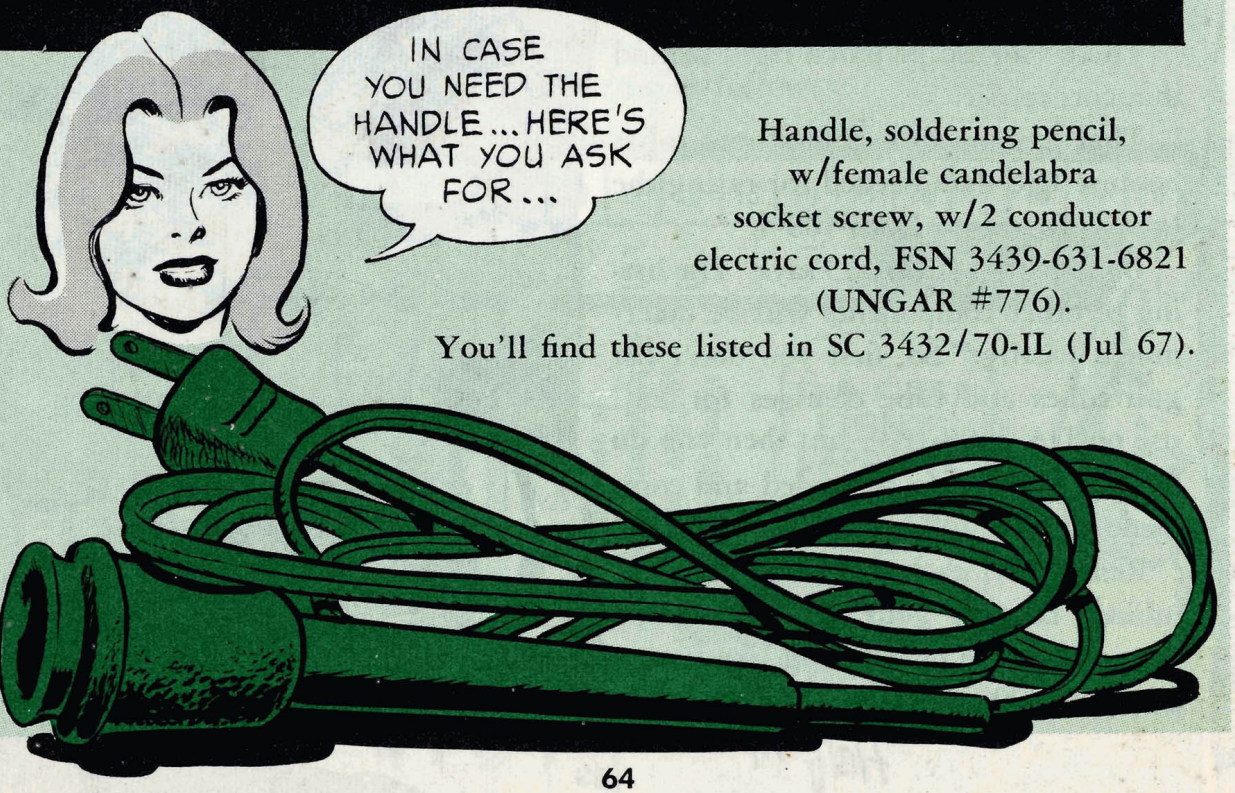


1/8" OD, conical point tip, w/#6-32 UNC male thread other end, FSN 3439-827-5445 (UNGAR #PL-331)

1/8" OD, conical point, bent tip, w/#6-32 UNC male thread other end, FSN 3439-835-1646 (UNGAR #PL-332)



1/8" OD, tip, w/long taper to 1/16" diam point, w/ #6-32 UNC male thread other end, FSN 3439-801-0953 (UNGAR #PL-338).



Handle, soldering pencil, w/female candelabra socket screw, w/2 conductor electric cord, FSN 3439-631-6821 (UNGAR #776).

You'll find these listed in SC 3432/70-IL (Jul 67).

Connie Rodd's BRIEFS

New Pinpoint Pubs

Your Mobility Equipment Command technical publications will be distributed by the pinpoint system on DA Form 12-25 starting in 20 Jan 1968. DA Circular 310-43 (14 Sep 67) gives you the word. The 12-25 supersedes DA Form 12-33, Requirements for Rail, Marine, and Amphibious Equipment Publications, so be sure to include these when you send in your outfit's DA Form 12-25 to St. Louis.

Multifuel Changes

Your 2½-ton or 5-ton multifuel engine truck now gets its engine oil and its oil filter elements changed twice as often as it used to—every 3,000 miles (or 3 months) instead of every 6,000 miles (or 6 months). That's the word in TWX No. 9-11841 (27 Sep 67) issued by the US Army Tank-Automotive Command. Natch, like the LO's say, more frequent oil and filter changes may be needed under "unusual conditions."

Flying Helmet Help

You flyers will want to take a look at Change 1 (18 Jul 67) to TM 10-8415-202-13 (Sep 66). It has the latest info on parts for your APH-5, APH-5A, APH-5B, and ballistic type protective flying helmets.

DA Form 12-21 Revised

Be sure your outfit shoots in a NEW DA Form 12-21 dated 1 Oct 67 to the St. Louis publications center right now. DA Circular 310-46 (18 Oct 67) gives the word to get them in by 15 December. Form 12-21 is the one on which your outfit orders pin-point distribution of Federal and Army supply catalogs. If your outfit has the Army Master Data File on microfilm, you won't need to order ML's and RL's.

Watch For TM Change

Be sure to get Change 2 (1 Aug 67) to your M16A1 rifle's "bible"—TM 9-1005-249-14 (Aug 66).

It has the official poop on lubing with LSA, plus a lot of other important info . . . like updated parts and stock numbers and some PM data.

Pubs Go Too!

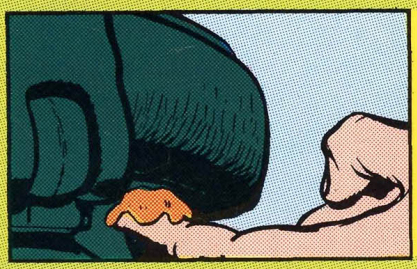
When you turn in a piece of equipment and you're going to get another type in its place, don't forget to turn in the publications that go with the piece you're swapping. They could be mighty helpful to the next guys who use that equipment.

Would You Stake Your Life right now on the Condition of Your Equipment?

PURGE THE DIRTY

MAKE SURE YOU FORCE OUT ALL THE OLD DIRTY LUBE BEFORE YOU STOP.*

WIPE FITTINGS CLEAN BEFORE LUBING.



CHECK BLIND SPOTS BY HAND.

* Hold it – don't blow it out! Some lube points are for sealed areas or where lube is under pressure. Never pump till lube comes out of these. See your TM or LO.